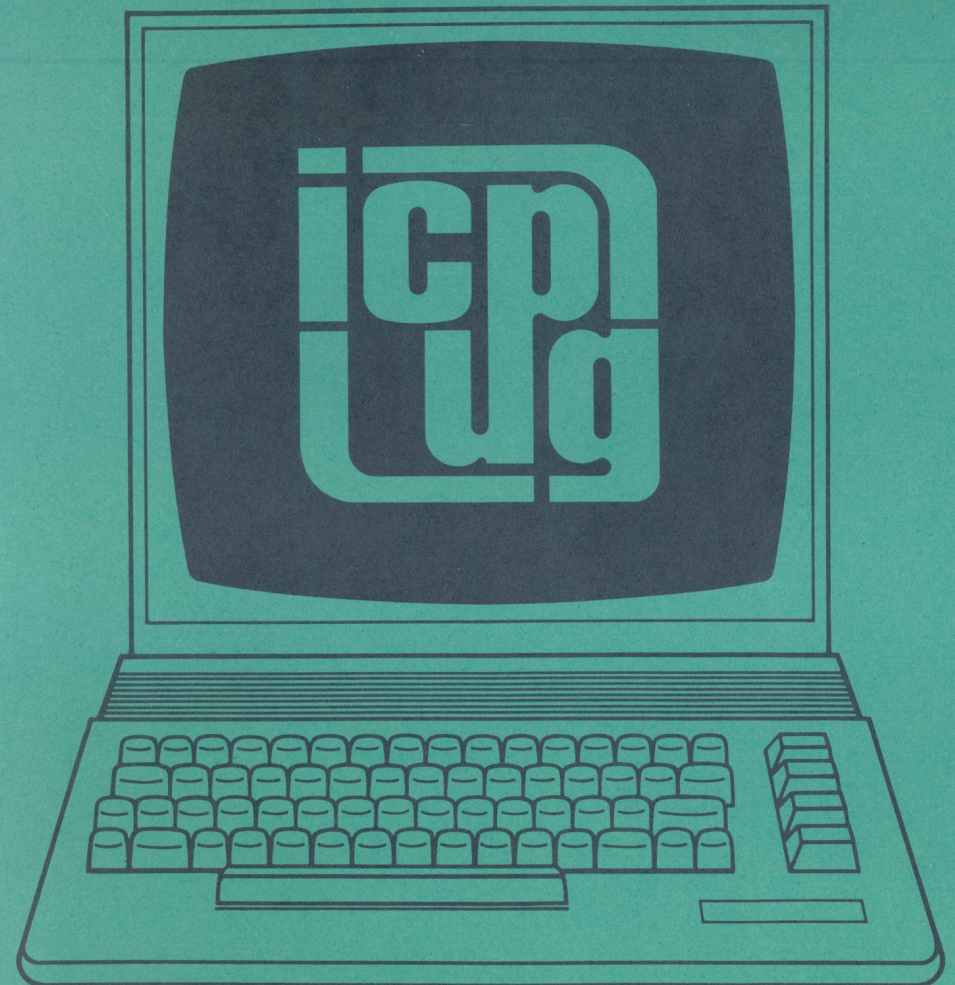


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EDITORIAL

Well, it seems that after another exciting A.G.M. your honorable committee has gotten itself re-elected, and you are stuck with me as your Editor (officially now) for another year. Do I hear cries of 'shame'? The allegations of ballot rigging are, of course, unfounded (unless you mean rigging the vote to NOT get elected!). We don't have any records, but I'm convinced it must be one of the shortest meetings of all time. There will be a full report in the next issue, if you can find it.

Many of the letters I receive have a section in them that says something like this. "There is far too much Amiga material in the Journal for what is after all a minority of the membership". This is a point of concern which both myself and the National Committee have been aware of for some time, and indeed the proportion of machine-specific editorial is closely monitored. The harsh reality though, is that the Amiga is the machine that is attracting the attention of what we in the industry call 'wiggles' (ie people that try to get to grips with the machine and discover all there is to know about it). The 64 is far from dead, but there is nothing new to be discovered; almost everything to say about it has been said. The 128 still has some potential, but Commodore effectively murdered it in its infancy. We will always support the 8-bit machines, both technically and in the Journal. However my personal expectation is for a steady decline in the proportion of 8-bit articles - simply because people will stop writing them. I may be wrong, and I hope I am; but if you guys don't write the articles, I cannot print them.

This issue prompted me to take a look at the current membership statistics, and I thought you might have more than a passing interest in them. The total number of members for 1989 at the time of goint to press is 2800. The percentage split in terms of computer and peripheral ownership is as follows.

COMPUTERS	% OWNERSHIP	PERIPHERALS	% OWNERSHIP
C64	46.99	Disk drives	94.81
Amiga	45.24	Cassettes	56.01
C128	29.67	Printers	84.61
PET / CBM	10.95	Monitors	60.99
VIC	9.91	Modems	21.69
Plus/4	8.77		
PCompatible	5.01		
C-16	1.72		
700	1.00		

This information is drawn from those little boxes on your membership and renewal forms. It is only a rough guide, as not everybody fills these in. However, you will see from these figures that our proportion of Amiga coverage is about right.

With the AGM, I handed over the running of the PCompatibles library to Don Skene (see inside back cover). The library now spans the three most popular PC disk formats - 360K and 1.2M 5 1/4" and 720K 3 1/2". Don holds all the master disks and collates and adds new material. Each of the copiers now holds the entire library in his favoured format. The catalogue disks, which cover all formats are also available from each of the copiers as per the normal library rules. Unfortunately, due to holidays and such on the part of some of the copiers, I was unable to obtain any firm commitments for the 360K disks, so for the period of this issue only, Don Skene has kindly volunteered to step in. Meanwhile, if anybody out there would like to become a 360K PC copier, send your offer to Don.

From next issue, we hope to be experimenting with production of the Journal on the Editorial A2000 (which is due to arrive within the next fortnight) and Protext from Amnor. For the next two issues, we anticipate running the two systems in parallel; both Protext and Vizawrite. As a result, I'm going to ask contributors to please pay close attention to our house style when submitting articles for publication. That way we can spend more time getting the new system running smoothly and less time with the red marker pen.

To recap on our house style. All articles should be submitted on disk. We can take 1541 (4040), 1571, 8050, 8250 and Amiga. Please note we are unable to accept 1581 disks (unless you send the disk drive with the contribution). If you have a printer, please supply a hard copy of the article as well.

If your wordprocessor can save files as ASCII text, please send them in this format, as 90% of wordprocessors produce pure gibberish which Vizawrite cannot understand. I don't know yet what formats Protext will read. Vizawrite cannot import double quotes ("), so please if you use any, replace them with two single quotes. Do not include any formatting in your articles - centering, bold, italic, underline tabs etc, since we don't use them and would only have to strip them out. Finally, only use a single space after a full stop, and for end of paragraphs, use a single return followed by a three space indent, rather than two carriage returns. The first paragraph of an article is always flush to the left margin. Naturally you will want a by-line. These are on the second line under the title (which is all caps), small 'by' and no full stop at the end.

If you can please bear these items in mind when writing and submitting articles, we will be extremely grateful.

TWA

CHAIRMAN'S CHATTER

by John Bickerstaff

Now that summer is here... Well it must be summer because the June Commodore Show is over for yet another year and we are already preparing for the PC Show. This year it is an autumn show since it does not start until the 27th of September. Remember the PC Show is being held at Earls Court this year. Don't go to Olympia by mistake.

Manufacturers and dealers are often heard to say that business is very poor in the summer months but from our experience members' enthusiasm does not wane whatever the season. We are encouraged by this and so ensure that our various facilities are available to you throughout the year.

The ICPUG Annual General Meeting

The AGM took place on the 6th of May and a full report will appear in the July/August edition of the newsletter. However, I would like to welcome all the committee both new and re-elected members. They will each devote much of their free time during the coming year to ICPUG matters and I thank them on behalf of you, the members, for their commitment.

Whither the 64 and 128 machines?

Irving Gould, Commodore International's Chairman has announced that there are to be NEW 64 and 128 machines which will have faster processing and improved colour displays yet remain compatible with the earlier models. There has been some speculation on just how the updating will be effected. It is possible that the clock speed may be increased. Which reminds me that a member from Scotland told us last September that he had speeded his 64 up to about 6MHZ, above that it just blew up - he was on his third machine at the time. Another piece of news that came to our notice last week was that the total of 64 and 128 machines manufactured exceeded NINE MILLION! They are the best selling home computer in the history of home computing! We should be proud to be Commodore computer owners.

SUPERPIC - REVIEW

by David Annal

SuperPic is a realtime colour frame grabber. That is, it will immediately digitise any video frame you happen to be looking at with a one key press. The signal may be coming from a camera or a video cassette recorder or even from your TV or outer space! No colour filters are required and, unlike some of its competitors, there is no need to freeze the frame in order to grab it, everything works instantly. A Genlock is included for overwriting existing videos - more of which later. Models are available for either PAL or NTSC.

The works are contained in a sturdy metal box 12 x 2 x 6 finished to match the standard Amiga colour. SuperPic is connected to the computer (Amiga 500 or 2000) by unplugging the video lead from the monitor to computer and taking this into the back of the box and then plugging a ribbon cable from SuperPic into the vacated socket. Another ribbon cable plugs into the parallel port. The lead from SuperPic to the computer is short: it has to be otherwise the fast pulse signals carried would deteriorate. This means that the unit has to be placed immediately to the right side of a 2000 or on top of the left side of a 500. Power is provided by an external power pack similar to those used for running cassette radios off the mains. (NOT ANOTHER ONE!! 'Fraid so. I now have 6 of these on my bench, the rest running: a synthesiser, sound expander, modem, A/D converter and a small TV! But I digress!) As yet there is no model available for the A1000 although Richard Leman, the designer, tells me that it could be easily done if there was a demand.

Having connected up and made sure the three position front panel switch is in the 'Amiga' position one now boots up the computer using the disk provided. The screen displays the computer output in the normal way and soon the Workbench appears with a SuperPic icon. Clicking this reveals a window containing several icons one of which is a fair facsimile of the SuperPic panel. After clicking this we enter the realm of SuperPic itself.

Connect a video source to the 'Video in' socket on the front panel and turn the switch to 'Video'. The picture appears on the monitor and can be adjusted using the brightness, contrast and saturation controls on SuperPic. (The end knob marked 'Hue' has no effect in the PAL version). Now turn the switch to 'Framestore'. The video apparently continues as before but you are now looking at frames from the frame store and not those arriving from the source. They are being digitised and displayed in real time and the action takes place before your eyes! The picture may shrink a bit but don't worry, it will digitise correctly. The controls may need to be adjusted slightly to get the best picture.

Pressing the Z key (for freeZel!) stops the digitizing process at the next whole frame grabbed and displays it as a still. This can be imported into the computer by pressing the I key and the picture will be converted into the mode chosen (default is HAM+) and stored in a 'Slot' of RAM. It can be viewed by turning the panel switch to 'Amiga'. Returning to the 'Framestore' position and pressing the Z key starts it grabbing pictures once more. Unlike conventional frame grabbers where you press a key to grab, with SuperPic you press a key to stop grabbing!

Having gone through the process of how the frame grabber works, let me explain briefly what facilities are available in the whole package. The format used for the storage of frames in the memory of the box itself is SuperPic's own and is called the 'Raw' picture. Full details of its form are given in the manual. There is enough memory in the box to capture one non-interlaced picture and this should be sufficient for most purposes. Extra memory can be added if higher resolution is required and sockets are provided on the board to accommodate it. Raw pictures can be saved direct to disk for loading back later. Usually they will be converted to an Amiga format and stored in the computer. The HAM+ is usually used. Pictures are stored in RAM 'Slots' and the slot must be designated before importing a picture. Imported pictures will overlay any picture already in a slot so a new slot must be chosen each time if you wish to keep the pictures already grabbed. Alternatively, they can be saved to disk. A nice facility provided is the ability to draw a frame round just a part of the picture and save only that. This obviously saves memory and disk space. For example, it would be useful in keeping a record of faces for a database such as SuperBase.

The screen format used by SuperPic can be changed. For example, the number of 'lines wasted' at the top of the screen can be set. These lines do not carry video information. The screen can also be set more to one side or up and down. The default values are discussed in the manual. It will also adjust itself to accept overscan.

Several tools are provided in the program which are specifically for processing black and white frames. Using these one can alter the brightness and contrast of a grabbed frame, use edge detection, alter thresholds, etc. No colour tools are included as yet but several sophisticated packages already exist which will do this for you eg. Colors in Deluxe Photolab, Pixmate, etc.

SuperPic has the ability to use 'Multi-capture'. In this mode up to 8 pictures are taken and the program then processes them and extracts a mean picture. This could be useful on static subjects to reduce the 'noise' of low light levels and produce a satisfactory picture where none were acceptable individually. It can also be used for special effects.

Now to the Genlock. This must be turned on BEFORE the computer as the Amiga looks to see if such a device is present when it powers up. If an external Genlock is connected it passes control of the video signal to it. Using this mode, the signal from the video source will appear on the screen of the computer as a background and it is possible to run other programs in front of it. Paint programs like Deluxe Paint can now draw over the screen as the video runs or be used to add titles, etc. If the source of the video signal was a video cassette, a second one would be needed to record the result of the mixture and a video-out socket is provided on the back of the Superpic box for this purpose. If the source of Genlock sync pulses is turned off, the ordinary Amiga display will fail as it has no pulses to sync to. It will return once the source is turned on again. JCL are thinking of providing sync pulses on board that continue at the same rate at those that were removed until the external pulses reappear. Even so, this effect should not bother most users.

SuperPic software can be copied onto other disks or a hard disk and the program can be run from the workbench or the CLI. In either case the superpic.library software must be placed in the current libraries drawer. It is possible to run just the genlock program by using icons in the SuperPic window or via the CLI. Some programs, like Deluxe Paint, turn off the genlock software when they load or close down. It is a simple matter to turn it on again using this facility. Some programs, like Photolab, will load and quit without interfering with the genlock at all!

Moans? The Video ribbon is incredibly short and leaves no scope to arrange your desk. The reason for this is explained above but it is a nuisance. Also a nuisance is the external transformer. Wouldn't it be nice if a feed through switch were provided so that one could flip it to connect the monitor to computer when the unit is not in use. As it is, the monitor has to be disconnected and plugged into the computer again each time the digitiser is used. While on the subject of plugs, that completely non-standard 23 pin D format for the video lead causes trouble yet again in this hardware. JCL could not obtain such sockets for the back of the unit from Commodore without buying great quantities. The compromise is to use a 25 pin socket and remove two pins! This means that it is possible to insert the plug in two different registrations. One will work and one will not. JCL assure me that no harm will be done if the wrong one is used! The manual is just about OK but it is obviously written by a boffin and not a friendly guide who assumes the reader knows nothing about video. The one I have got is a 'Temporary Manual' and a better version is promised which will be sent to all buyers later (still not available at time of writing). The PAL version now defaults to 256 lines and there is no need to reset from the 200 line NTSC version but wouldn't it be

nicer to provide us Europeans with some sample pics of our own format instead of the USA bottom-blank kind. After all it is BRITISH made. Let the others adapt our demos: we already have to put up with a redundant knob!

Overall impression? A nice box of tricks that works well. It takes some time to get used to the actual digitising process. Bands of colour appear across originally smooth surfaces as the threshold changes from one brightness value to the next. This is not a fault of the package but results from the differences in video formats. The manual gives tips on how to minimise this effect. The setting of the controls when digitising is fairly critical and may have to be varied to compensate for differently lit frames even from the same video. Light, more light, and even more light on the subject is a good rule if you are taking your own pictures for digitising but you have no control if the pictures were shot by others.

I would recommend this package to other members. The price is fairly high but compares favourably with other frame grabbers currently being advertised. Beware, if you want a realtime frame grabber make sure you don't compare this one with others which state they grab colour pictures but only do so from VCRs which are put into a pause mode first!

Available from Precision Software, 6 Park Terrace, Worcester Park, KT4 7JZ.

Price 499+VAT. (but see Discount Corner for special ICPUG deal).

Makers - JCL, 71 St. John's Road, Tunbridge Wells, TN4 9TT. 0892 510845.

PLUS/4 TIPS: Script/plus

Two disk drives can be run using the two memory blocks (Esc j [return]) with one as device no.9 and the other as device no.8 by setting up one 'setup menu' @ (D)isk(T)ape or Device No.(8)?d with 9 to replace the 'd' and the other bank as device no.8. The printer prints that memory block shown on screen. Swop blocks and it will then print that. Not an earth shattering discovery but someone may find a use! No exchange of files between disks seems possible, for backup copies etc. unless you know otherwise. Then tell the rest of us!!

SEVEN AND-A-HALF BITS (of a bus??)

by Joe Griffin

8 bit support

There have been a few voices raised in protest recently over the amount of Amiga content in the ICPUG newsletter and the relative scarcity of support for the 8 bit Commodores. I am an 8-bitter, I have no desire to obtain an Amiga, as I am not interested in games, music, graphics or outdoing the neighbours by having the latest technology! Now for the benefit of the two remaining ICPUG members that I haven't just upset, I'll return to the point.

Within the group, we have a wide range of talents. At the upper (?) end of the range, we have people like Amot, Cranstoun, Grainger, Todd & Tranmer some of whom work professionally in computing and who are pushing the boundaries of knowledge on the machine. In 1982, when I first joined ICPUG, they and their predecessors were running 8096's and were starting to play with VIC-20's. The moan from the membership in those days was what about all of us with 3032's, we aren't getting support any more. When the 64 appeared, that was the new ground and attracted the bulk of the interest. Then came the ill fated C16 and Plus/4; these never attracted the same monopoly as the 64, possibly because they were perceived within the group as over-priced games machines. With the arrival of the 128, there was again a burst of monomania within the newsletter which was followed in short order by the advent of Commodore's ultimate games machine, the Amiga. Those few people who are really out in front (as opposed to the many who would like to think they are) are breaking new ground. They can't find much new ground to break on the 8096 or the 64, it was done 5 or more years ago but the Amiga is new and relatively unexplored.

In the second rank, so to speak, come the vast majority of those who write for the newsletter. I class myself in this group. We are knowledgeable about our respective machines but are not in the expert category. Below this (in terms of knowledge, not importance) come degrees of expertise right down to the member who has a machine but knows little of it other than how to run specific programs and has joined ICPUG mainly because we are the only people who write about that machine, other than in terms of games software. I don't bother to count those people who join only for the free software or the discount scheme.

As a librarian and a fairly frequent contributor to our Journal, I attract a fair number of letters with queries. Some of these queries are trivially simple (to

me, but not to the poor unfortunate who does not understand that you can slow a PET listing, rather than have it rush up the screen like an express train). However, now and again I get a real humdinger (usually from a novice) which leads me off on a voyage of discovery for myself. Then, of course, there is the glow of satisfaction when I sort out a problem for one of our members.

No, everybody in ICPUG has a role to play, whether they are a 'C' and Assembler programmer for the Amiga, or a 'on a good day I can find the power switch' type. However, I accept that for many of the more novice members, to say "if you don't like what's in the newsletter, give us a contribution" will frighten them off, rather than encourage them to write. BUT not so long ago we were all novices and the only way to become a writer of international repute, like me, [what? -Ed] is by actually doing some writing (on second thoughts maybe that should be 'ill repute'). It was pleasing to see a number of new names in the March/April newsletter.

To return to the original theme of 8 bit info; some time ago it was suggested in the National Committee that we should put together another 'Compendium'. The original 'IPUG Compendium' came out in November 1980 and contained most of the material of value for Original and Upgrade ROM PET's. We thought that a single publication, containing the words of wisdom of the past 8 or 9 years would be of value to many members. We got a response of about 10, only. I hope that an article on back numbers will appear in this issue, directing 8 bit users to previous magazines of particular merit for specific machines. [sorry, maybe next issue - Ed]

This column 'Seven-and-a-half bits' is part of my own attempt to ensure that every issue contains something for the 8-biters. I would like your feedback; ideas for future rantings will be gratefully received and considered and your help is immediately requested.

Disk Drive Identification

Many of you will know that I have a 'thing' about disk drives. A number of the programs I have written or developed use a short routine to identify the disk drive in use, from its ROM code. Recently, it was pointed out to me by a member that his 1571 claims to run DOS 3.0, whereas my routine identified it as a 1571 running DOS 3.1. My 1571 (which as you know from the last issue contains the 'latest' Commodore ROM) is identified as DOS 3.1. So the way to tell if your drive is, for the moment (but see below), insolubly bug ridden, is to look at the DOS version.

The routine I use is essentially this:

LAN COMPUTER SYSTEMS

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Vision 4200 Monitor (Mono)	£189.00 + VAT
Commodore 1084S Monitor (Stereo)	£229.00 + VAT
Phillips 8833 Monitor (Stereo)	£209.00 + VAT
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Panasonic 1024 24 pin	£260.00 + VAT

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Cumana 3 1/2" External Drive with on/off Switch	£82.00 + VAT
NEC 3 1/2" External Drive with on/off Switch and thro' bus	£65.00 + VAT

LANSOFT CLUB

Get even more money off your software as a Lansoft member. The cost to an ICPUG member for membership is just £10.00 a year. For example a £24.95 game can cost as little as £5.95. Phone for a membership form or come along and see us.

PRIZE DRAW: For every £20 you spend with us you will get a ticket for the draw. The more you spend the more tickets you will have, but you must show this advert to get your TICKETS. 1st prize a Colour Monitor; 2nd prize a Disk Drive. 30 Game Software Titles for runners up.

We cover a wide range of Commodore equipment so give us a call for any prices or help you may need.

Please note prices are current at the time of going to press and subject to availability.

1063 High Road, Chadwell Heath, Romford, Essex RM6 4AU 01-597 8851


```
OPEN 1,8,15:PRINT#1,"M-R"CHR$(a1)CHR$(ah):GET#1,A$:A$=A$+CHR$(0):CLOSE 1
```

Printing the ASCII value of A\$ will then give the value read from ROM.

The drives and values I know about are listed below, if anyone finds a drive which does not conform, I would be pleased to hear about it and investigate further.

Initially, I interrogate the high byte of the reset vector, to obtain drive identity. In a few cases further investigation is required.

a1	ah	a\$	drive type
255	255	255	1581 or d90xx hard drive
		254	1541, 2031 or 1571
		242	8050, dos 2.5
		241	1551
		226	3040
		213	4040, dos 2.1
		198	dos 2.7, 4040, 8050 or 8250

To distinguish between drives having the same hi-reset value, a second location is read:

3	164	117	1581
		0	d90xx hard drive
21	255	141	1541
		81	2031
		76	1571 (dos 3.0 & 3.1)
234	16	0	dos 2.7 4040
172	16	1	dos 2.7 8050
		2	dos 2.7 8250

If you have a drive which doesn't conform, please let me know. At the moment, I would like data on 1570, 1540 (Vic) and 2020 drives. I'd also like ROM dumps from these drives and the 1551, original (metal cased) 2031 and SFD 1001. I can supply a program to obtain a ROM dump, if anyone would like to assist.

1571 Bug Saga

Following on from my article in Vol 11, Issue 2, I have had feedback from a few members with metal 128D's, confirming my findings. In particular, I sent a copy of the test program to Tim Harris of Financial Systems. Having found the bug on his machines, Tim tested the 1571 with Jiffy Dos fitted. Sadly, it failed but when Tim spoke to the authors, they admitted that they were unaware of the bug and promised to fix it. I have written direct to them and hope that we will see a fix for our machines. As before, I will keep you updated through this column.

Super Diskdoc

I have mentioned Precision's SDD in many articles. Its one major failing, in my opinion, is that it does not cater for the 1581 3.5 inch drive (which was introduced after the program was written). Some time ago, I did offer Precision my services in producing a new version of the program to cope, but received no response. I suspect that this is because they are not willing to invest effort in promoting a product for machines at the end of their life.

In order to use SDD with the 1581, I have hacked the code, to replace the data for the 8050 (which I don't have) with the details for the 1581. At the moment, the BAM functions do not work, but everything else does. I AM NOT WILLING TO DISTRIBUTE THIS MODIFIED VERSION OF THE PROGRAM, but if there is sufficient interest, I will publish the changes required, probably in the form of a patch program. They are very simple to carry out and only about 25 bytes of the data table need to be changed.

If anyone else has already done this, please let me know, so that we can compare notes.

THE NEC P5200 PRINTER

by Betty Clay

Printers and computers are necessary companions, but mine have always seemed to be contentious pairs. My first computer system consisted of a Commodore 8032 computer and 8050 dual drive, coupled with an Epson printer. An IEEE interface was installed in the printer, but it was after long and frustrating weeks that I learned how little compatibility this gave me. When I tried to learn programming, the Epson replaced many of the Commodore characters with spaces. The printer was fine for text, but useless for many other things. Later, I used a Commodore 64 with a Star SG 10. This was a much happier combination, with a minimum of disagreements between the two. When I bought my Amiga, I noted that the Star had a standard Centronics interface, so I arranged for a proper cable and thought I was well set, a standard printer connection at last. So much optimism so soon shattered. The printer worked in fits and starts, but mostly fits. When it worked, it refused to page properly. My friends wondered about letters on disk instead of paper. Editors stopped getting hardcopy from me. Life was not happy. Even though the printer was in excellent condition, it was obvious that it had to be replaced. I became more and more convinced that any printer unsupported by a workbench driver was an unsatisfactory printer for the Amiga, so this was my first consideration when I went shopping for a new one.

It was my definite intention to purchase one of the Epson 24 pin printers. Every piece of software and every computer I know about supports the various Epson printers. Since compatibility was my major concern, the Epson seemed to be the logical choice, and I went out to find the best Epson for me. I came home with the NEC P5200. When I looked at them side by side, and compared all the features, the NEC won on every point. Cost aside (and it was about \$150 less than the comparable model from Epson), it had features that made it a clear winner. The 1.3 Extras disk has a driver for the NEC Pinwriter and for the NEC 2200, making it fit my major category of concern.

Physically, the 5200 has a strong, hefty feel to it. It weighs 21 pounds, and the case seems quite sturdy. The platen is full size, with a large, comfortable knob for positioning paper manually. No less than twelve rollers manage the paper: four on the bail, four on the plastic cover, and four rubber ones above the push tractor. There is a single sheet feeder slot on the top, and a sheet feeder for multiple sheets is available at extra cost. I didn't purchase that. The front cover is hinged in two places. Both sections can be lifted to gain access to the ribbon and printhead, but a smaller section can be moved if access to

the paper is all that is needed. The back cover can swing up for access to the tractor paper, or can be lifted out of the way if desired. It is very easy to reattach, slipping over a pin on each side.

There are three levers on the top of the case. One is the copy control lever, which controls the pressure and adjusts for single sheets, multiple copies, or envelopes. The second toggles between single sheet feeding and tractor paper, and the third is the bail lever. The paper selection and bail levers do many clever things, working with the front panel switches to load or unload paper automatically, park the tractor paper or bring it back in, and to push the paper up for tearing and then restore it to the proper print position for the next sheet. With the P5200, there is no reason to lose a sheet of paper after every printout.

The front panel has enough buttons and twinkling lights to delight the most gadget happy amongst us. There are buttons (touch panels, really) to put the printer on or off line, to advance the paper either a single line or to form feed, to reset the printer, to set the printer in quiet mode (by reducing the speed), to select the pitch of the print, and to select the typeface to be used. These buttons can be used in several combinations to change the printer's memory, and the changes can be stored so that the default values are changed. Most of the lights indicate an on / off condition, but there is an alert light that flashes codes indicating the kind of problem that has stopped the printer. At the bottom of the printer, there is a pull out drawer with a listing of the error codes that appear in the alert window. Another slot is provided for extra font cards, and several are available at extra cost.

Paper loading is very easy. For tractor paper, the back cover is lifted or removed, and the paper set over the tractor pins. The tractor guides are easy to adjust, and lock down securely. After closing the cover, the select lever is pushed back to indicate tractor paper, and the bail lever is pulled forward to signal the printer to load. Paper is automatically brought to the proper position for printing. If single sheets are needed, the select lever is first pulled forward to the single sheet position and then the bail lever pulled forward. The tractor paper is then automatically rolled backwards and parked out of the way. A sheet of paper is dropped through the slot on the top cover, the bail lever pulled forward, and the single sheet is automatically loaded to the correct printing position. Envelopes can be loaded in with the automatic loader, but they don't always load, and don't always stop at the right spot for addressing. This could very well be caused by my software. ED was not really designed for addressing envelopes!

Three kinds of cartridge ribbons can be used with the P5200. For normal use, there is a cartridge with a regular cloth ribbon. The ribbons are at least as

durable as most, but are more expensive. For really fine work there is a multistrike ribbon. When I bought my printer in November, I was told that the multistrike ribbon would be sent immediately, but it has not yet arrived. These are available now, but my dealer was out the day I was there. The multistrike ribbon belies its name, however. The dealer told me to expect no more than thirty to forty pages of work from them, and they are single pass ribbons. Those who purchase the colour module will need a four colour ribbon. The color module is available now, but my needs do not justify spending the \$100 for the adapter and ribbon.

The P5200 has many fonts available. Letter quality fixed fonts include Courier in 10, 12, 17, and 20 pitch; Prestige Elite in sizes 12, 15, and 20; and ITC Souvenir in either 10 or 17 pitch. Proportional letter quality fonts are Bold P.S., Times P.S., and Helvette P.S. There is also a draft quality font, Gothic, in 10, 12, high speed 12, 15, 17, and 20 pitch. Even this draft quality is quite readable.

The P5200 comes from the factory with the draft quality print set to high speed (265 cps) mode, 12 pitch. The Courier 10 font is set as the default, with the USA language, the IBM character set, the zero without the slash, unidirectional graphics, and for download font sets of 128 characters. Default settings are for U.S. letter size paper, six lines per inch, the skip over perforations off, and the paper tear-off is one inch from the print head. In default mode, the 80K(!) buffer is not set to receive a download character set. The printer is set for a parallel interface, but a serial connector is available as an extra cost option. Default baud rate is 9600, with settings from 150 to 19200 bps available. All of these settings can be changed by setting the front panel buttons for memory mode and following the instructions to set your own preferences. Changing these defaults is so easy that it is not a chore to reset the printer for a single job, then reset for the next one.

The printer manual is the best I have had. The one with my Epson MX 80 was a joke, and was intended to be that. The author was so eager to be readable that he forgot to include much information. The Star manual was not bad, but had no index. This manual is indexed. Topics are grouped to make it easy to find information, and the organisation is logical, moving from setup, through memory management, and then into programming the printer. One section describes the pinouts, timing signals, and logic elements, and appendices give full descriptions of various other features. One interesting feature is the ability to get a hex dump of your work so that you can see the exact codes the printer is receiving.

The manual describes ten graphics modes, with densities of 60, 80, 90, 120, 240, and 360 dpi. To obtain the 360 dpi, the NEC Pinwriter driver can be

selected from Preferences (after copying it over from the 1.3 Extras disk), and density 7 chosen from the printer preferences screen.

The Epson LQ2500 will also drive the printer, but will not take advantage of all its capabilities.

Print speeds differ according to pitch and print quality, of course. The fastest is Draft 12 high speed, given as 265 cps. This is not very high quality print, but is good for a very quick printout. Regular draft print is very readable, and works at a quite respectable 220 cps for 10 or 20 pitch, slowing down to 165 at 15 pitch. Letter quality type faces range in speed from 75 cps for 10 pitch to 147 cps for 20 pitch. The proportional type faces claim a speed of 94 cps. Dot size is given as 0.2mm or 0.0079 in. Vertical spacing can be 180 or 360 dpi, and n/60, n/180, or n/360 lpi, with maximum resolution given as 360 x 360 dpi.

My use of the printer is almost totally for text. The printouts are beautiful. Paging works properly with every program I've run. The only really aggravating problem has been caused by programmers who reset the printer before letting it work. Selecting a font from the front panel ought to work, but it doesn't. That automatic reset goes back to the Courier 10 pitch every time. WordPerfect does a bit better. There, I can select proportional spacing and it will use Bold P.S. every time. My own preferred typeface is Helvette P.S. The ability to change the memory has provided me a way to work around these limitations. I set the default font to the typeface I want to use before loading WordPerfect, and can use any two of the fonts during a session. The normal WP commands allow the selection of various sizes of type. Were it not for the reset issued by WordPerfect before every printout, one could send the printer the proper codes before printing. One of my next ventures will be yet another trip through the WP printer drivers to see if I can turn off that reset, and to determine whether doing so makes things better or worse. I would love to be able to select a font from that front panel.

When using ED (and I do use it frequently, especially for disk labels), the preferred font can be selected from the panel, with the pitch and lines per inch set from preferences. I'm fond of a PD print formatter named GWPrint. This one does an initial reset, but quick use of the SELECT button will then allow me to make my own selections, and I can change them as often as I like. I do long for Preferences settings that would allow me to choose the typeface. These problems lie in the Amiga software, however, and not in the printer.

In the printer itself, my major complaints are with the paper handler. The features are wonderful when they work. Perhaps my own klutziness causes these problems, but I find that the paper frequently bunches up instead of backing out properly. It does move forward well, and stops at the proper

printing position dependably. With single sheets, most loads are accurate. Occasionally, the paper seems to not find the correct spot and refuses to load. Sometimes a loading error will require removing all paper from the printer and starting again in order to clear the error circuits. These problems do not occur frequently and are not severe, but they are there.

I do not know the list price of the NEC. It is advertised in the mail order ads at about \$530 - \$550 range, and sells for \$535 in a computer store in Dallas. The colour module costs \$100, including one colour ribbon.

I have found the P5200 to be a reliable printer, with outstanding text output. The Epson LQ2500 driver works well for textual output, but the NEC P2200 driver is available, and uses more of the printer's capabilities. My experience with printers is somewhat limited, but of the ones I've tried, both at home and in the school system, this is by far the best. It is strong enough to do a good job, and the output is outstanding. It is SO outstanding that six people have told me that, after admiring its output in my letters, they have purchased one for themselves.

BASIC 8

by Charles Hooker

You may have read my short article Knitting and Computers in a recent issue of ICPUG. Following the writing of that article, I came across the problem of how to use the graphics in 80 column display. I had contemplated writing to ICPUG to ask if anyone had any ideas on the subject, when, lo and behold, in two of my Commodore magazines appear an advertisement for Basic 8. In case someone out there has not heard of Basic 8, it is an enhanced basic language that sits on top of basic 7 and allows for a number of graphic commands to be added to the encyclopedia - 53 in all, and permits 3D views. It only operates in 80 columns in 128 mode, and requires a 1541, 1570, 1571 or a 1581 disk drive. One point I would add in connection with disk drives, I use 1541 drives with Dolphin Dos, which is fine as long as you take the RAM out before you attempt to load the program. If you forget, as I sometimes do, the drive just runs without picking up the program. It supports a joystick or a 1351 mouse. Basic 8 supports a number of printers including:-

Epson FX-80	Panasonic 1091
Star NX-10	Olivetti PR 2300
Star NX-10C	Mannesmann Tally Spirit 80
Gemini II	MPS 801/Seikosha/Gemini 10X
Cannon PJ-1080A	

You can also write a printer driver program for your own printer if not included in the above. See the manual.

My problem was how to produce graphics in 80 columns and this program does precisely that. I am still playing with the program and decided that the 16K of graphic RAM in my 128 is insufficient for my needs. The manual that accompanies the Basic 8 disk informs you that you can replace the present 16K with a 4464 chip to increase the RAM to 32K and two of these will give you a full 64K of graphic memory.

The Basic 8 program comes on a disk, which, when fired up, asks you which program you want to copy (five come on the disk). There is a Basic 8 editor, Basic 8 Paint and Basic 8 Runtime, on one side of the disk. Now all this might seem very strange, but the authors state that the disk is unprotected. In fact you cannot run the original disk as such. You may only copy from it.

So far, I have produced a number of quite startling effects and when I install the increased RAM I shall be able to do so much more. There is one major problem which has still to be overcome. I have been unable to get either the Paint or Runtime to work properly. This is due to scrolling. My RGB monitor has no horizontal or vertical hold controls and therefore I cannot rectify the problem myself. The suppliers of Basic 8, Financial Systems Software Ltd., of Worcester, have proved most helpful and are currently working on the problem for me. In fact, they have supplied a "scart" to RF lead in the hope that this might help.

There are three possible "MODES" in Basic 8 and you can only use "Mode 0" if you have an unenhanced 128. By the way, 128Ds have the increased 64K graphics RAM. One point I would add, Commodore's manual writers might copy the layout and style of the manual that accompanies Basic 8. It is exceptionally well laid out and comprehensive. It is loose leaf which I think is excellent. Needless to say, it comes from the States.

On the reverse of the main disk are two programs which use Basic 8. One is a workbench and the other a spreadsheet. One other excellent point is that Financial Systems operate a telephone service until 8.30 p.m. Other firms selling software for the home market might well consider a similar arrangement. It all adds up to excellent service and good value at £34.95.

TEXAS TALES

by Betty Clay

Spring has come to Texas now, and a flurry of activity arrived along with the season. It seems as though everything special that has happened in months has happened in the past three weeks. Here are some of the goodies:

Spring computer shows

On April 8 and 9, my computer club (SCOPE, in Dallas) was privileged to have Jim Butterfield here. He spoke to our Amiga members in the morning and to the C64/128 members in the afternoon. He was well received, as you might expect. On Sunday, he taught a class in beginning BASIC programming for those who wanted to attend. This class was held at one of our libraries, and the participants brought their equipment for a hands-on class. It was most helpful to those who came.

We had another special speaker that weekend. Vic Wagner, of Metadigm Corporation, had come to Dallas that week because of his regular job with Computer Automation, and stayed over to attend our club meeting. He brought along his newest software and demonstrated it to the Amiga section of the club in the afternoon. This program is called Colo(u)rburst, and is designed to get the very most out of a colour printer. It works with 24-bit colour and does some very special dithering, getting much nicer printouts than one can get with most graphic printing programs.

Several of the software houses had contributed items for door prizes for our special day, and various members of the club received free gifts such as a Lattice 5.0 C Compiler, PageStream, M2Sprint Modula-2 Compiler, SuperBase, WShell and Arexx, as well as some Amiga books and other smaller items. There were similar prizes for the members of the C64/C128 group.

People who are accustomed to the Commodore shows you have in London would find this a terribly disappointing affair, but we considered it one of the most successful events we could recall.

Jim Butterfield had been invited to speak in New Orleans on the Tuesday following his meeting with SCOPE. It is only about 500 miles from us, so my husband and I decided to go along on the trip. We had most of three days to roam the lovely old city (by American standards! Parts of it were built in the 1700s). We strolled in the French Quarter, feasted on fresh seafood that is so difficult to find in our inland cities, watched the paddle-wheel boats on the Mississippi and visited with the members of the New Orleans Commodore

club. About seventy members of the club attended the Tuesday night meeting and they were one of the most enthusiastic groups I've seen in a long time. Jim was surrounded by eager club members who wanted to discuss their problems and successes with him. It was a great trip.

After this trip, we said goodbye to Jim, but our travels were not over. Later in the same week, we travelled to Houston (about 300 miles) to attend a special event to which I had been invited. The main speaker at this event was Jay Miner, the designer of the custom chips that make the Amiga the special machine that it is. Last summer, when I began working on CompuServe, Jay was just beginning to use his computer with a modem and we discovered CompuServe about the same time. We have often visited with each other there, typing comments to each other and getting acquainted. It was a privilege to get to know him in person. In his speech, Jay told us about the early days with the Amiga, about the actual design and construction of the special chips, and of the troubles that brought about the sale of the Amiga to Commodore. Later in the speech, he also told us about his ideas for a new generation of machines that would be many steps ahead of any of today's machines - as forward looking today as the Amiga was in 1983.

The Houston show was sponsored by MicroSearch, the company that publishes the City Desk desk-top-publishing program. They have just released the 2.0 version of City Desk, and it seems to be sufficiently improved to take its place as competition for PageStream and Professional Page. The owner of MicroSearch is named Kan Yeung. His company is growing rapidly, and he encourages that growth by having some kind of special event about twice a year. This was his first attempt at something so large as this. It was more successful than he had even hoped. About eight hundred people came, purchased tickets, and enjoyed the day. Among the exhibitors were Haitex (3D glasses and XCad), MicroBotics (various hardware addons such as memory and hard disk controllers), RGB Creations (professional video setups using the Amiga), New Horizons (ProWrite, etc.), SunRize (sound digitiser), GVP (hard disks and controllers), C-Ltd (hardware expansions), a representative from AmiEXPO, and the regional sales representative from Commodore. I saw several things that impressed me. The new version of City Desk was impressive, and there was an excellent video setup on display. Of particular interest to me was an educational system. A set of programs designed to help learning-disabled users has been written by one of the neurosurgeons in Houston, working with a psychologist. The programs are written in BASIC, then compiled, making them easy to customise. The recommended system consists of an Amiga 500, the software, and a video system that includes a VCR and video tapes that accompany the software. A variety of subject matter is available. Each lesson is

designed to appeal to as many senses as possible, which is very sound educational practice. This system is now being used in a number of Texas schools and the doctor has had inquiries from many of the other states.

Two more events remain on my spring calendar. We are to move to another house during the last week of April, and the AmiForum will be held on May 6 and 7. AmiForum is a small, regional version of the AmiEXPO shows and is sponsored by the same group. This is their first visit to Dallas. There are about fifteen vendors currently signed up for AmiForum and more are expected. The show is expected to attract about three thousand people. Our club will have a booth for this one, which will be another first for us. How I do wish we had some of your organisers. Janet????

What's new?

Now that 1.3 has been released in England - are you having some of the same problems that we are finding here? [yes! - Ed] The most vexing of the problems has been for the owners of the A1000. It seems that the SetPatch routine that solves a number of the problems with Kickstart 1.2 has introduced a few problems of its own. In particular, SetPatch jumps out of the KickStart routine to make its patches without setting the bit that write protects the Control Store. This leaves the KickStart (for 1000 owners only - those with the 1.3 ROM need not worry) open so that buggy programs can write in this area. When an alert is displayed, and the machine must be rebooted, the code is checked to see if the Kickstart checksum is good and it is found to be faulty on far too many occasions. Then, instead of calling for the Workbench, the machine requires that the Kickstart disk be inserted. It has caused quite a bit of discussion over here. Commodore has assured us that the problem has been found, and that an updated SetPatch will be released - and I thought I had found that update. A new SetPatch appeared on our networks this week, and it seemed to address the problems that were to be fixed. When it was mentioned on Usenet, however, the Commodore team quickly told us that they had not released the new version, and that they knew nothing of the one being circulated. Some are using it and claiming that it is fine; I'm waiting for the official release. If someone releases a program claiming it is from Commodore, and it is NOT from Commodore - what subtle things might they possibly have put into that program? I prefer not to take the risk.

A trackdisk problem has been causing some - not all - floppy disks to spin out of control under certain circumstances. Most often, this happens when some of the drives have been left empty and disk activity has been heavy, such as would occur when backing up a hard disk to the floppies. The best

insurance for the present is to keep something in all the floppy drives at all times. The new SetPatch has a patch for the TrackDisk device, however, so once you have it installed you should be free from this bug.

Fatter Agnus anyone?

The newest 2500 machines are now being shipped with the 1 Meg Agnus chip installed. The machines that have this new chip are said to be marked with orange circles on the box, but there is no other indication. This was done very quietly, perhaps because the chips are not yet available in sufficient quantities to meet the demand. No price has been set, but rumours are that they will cost between \$100 and \$150. Pretty steep, I would say, yet most of us will probably find some reason to justify spending the money as soon as we can get them. This chip, supposedly exactly doubling the amount of chip memory, will more than double the amount actually available to software. It should solve many problems for this graphically oriented machine.

There is no real information about availability of the new Agnus for purchase, but there is even less about the remainder of the ECS (Enhanced Chip Set). Those chips are said to require the 1.4 version of the operating system, and most of us believe that they will not be released until 1.4 is ready. When? A few more Commodore weeks.

Software

New software has come rapidly in the past few weeks. PAGESTREAM is available and its output is remarkable - if you can get past the bugs so you can get output. Soft Logik sent out version 1.6 last week, which seems to have far fewer bugs, but has also introduced a few new ones. Discussion of the bugs in Pagestream has filled many a message on all the public boards here lately. The program had been eagerly awaited for a whole year, many having sent their money for it a year ago, and expectations were high. The potential is there, but even after all this time, the program was released before it was finished. But do remember - the potential is truly there.

PRINTSCRIPT is also available now. This one has not caused as much interest as I had expected, perhaps because we have relatively few programs that provide Postscript output. PRINTSCRIPT seems to be relatively free of bugs, it does give excellent output for Postscript-capable programs on non-Postscript printers, even dot-matrix printers. Here again, the potential is great. If you use a program that can do Postscript, yet do not own a Postscript printer, this program could save you much money. The retail cost here is

\$89.95, several thousand dollars below the cost of any Postscript printer I have seen.

In the public domain and freely distributable, we have new versions of several popular favourites. ARP1.3 was released during April, as was DiskSalv1.4. There is a new version of PopCli, as well. The new version of ARP was especially important to those who use ARP. This version is compatible with 1.3, can retain the protection bits, handle pure code, etc., and still offers enhancements and speed. The new DiskSalv has a number of bugs fixed, but also offers enhancements. In my opinion, every one who uses disks of any kind (and that should include everyone who uses an Amiga) needs DiskSalv. It is the best disk recovery software we have, the author asks only kind words or other public domain software in exchange, and we are all subject to occasional disk failure.

Before we meet on these pages again, you will have attended the Commodore Show in London, I will have attended the little AmiForum in Dallas - and I shall have had the good fortune to enjoy a visit from Joe Griffin! Perhaps I shall tell you all about Joe's visit. I don't have anything so fabulous as a tour of Wapping High Street awaiting him, but surely there will be something you should know. 'til next time.

PLUS/4 TIPS: 3+1 word processor

If you use script/plus but want to print 3+1 files, "read.me" files on the library disks for example, the editing can take forever if you try to convert them. It is possible to print out to some non-commodore printers by going into 3+1 word processor, loading the file, and the entering COMMAND mode. Next type "other" and "return". Enter COMMAND mode again followed by "*p" and "return", to start printing. Now its either "Bingo" or "Sulk mode".

COMAL DISKS FOR THE CARTRIDGE AND 0.14

by Brian Grainger

The following disks of programs, etc. are available from me, subject to the usual conditions. State clearly the title of the disk, particularly whether it is the 0.14 or 2.01 side requested, send a suitable number of disks (one per side), and return postage. Copies will then be sent to you.

These disks are from the USA and back up COMAL TODAY issues 18 and 19. No instructions are provided, although usually there are no problems. Refer to me in cases of severe difficulties. For each issue two disks are provided. One is for use with the disk based 0.14 version of COMAL (Power Driver). The other is for use with the cartridge 2.01 version. There are programs unique to each version as well as some provided for both.

The fast loaders on the 0.14 sides do NOT work outside the USA. You are strongly advised to load COMAL from the Power Driver starter disk anyway.

ct#18-version.14	ia	2a
cd#18 version2.0	ib	2a
ct#19-version.14	ja	2a
ct#19-version2.0	jb	2a

Unless I get permission to copy the speciality disks this completes the set of disks I will be copying from the COMAL Users Group USA Ltd. There have been 19 of them for 0.14 COMAL and 14 for the cartridge. All the previous disks in the series are still available and the catalogue disk includes directories of all disks from this series as well as the UK disks released. The catalogue disk has, due to its enlarged size, been split into two. The 0.14 catalogue is on one disk and the 2.01 catalogue on another. Usual rules apply if you want copies.

[Editor's note: It is against our long-term editorial policy to publish directory listings from library disks, as these listings are freely available from the library copiers. While we were thus unable to print Brian's eight pages of directories, we have provided the headers from the disks.]

C64 LIBRARY

by David Miller, C64 Libraries Organiser

Apart from the 4 new disks in the library under Ham Radio this month, mentioned elsewhere in the newsletter. I have also produced a new Games disk No G6. This disk includes an interesting game called "TWONKY", which is different as the game is a little basic and consists of trying to find and capture an unknown creature, but using digitised sound.

For all users who only have Tape Drives connected to their trusty C64, there is some good news. As from receipt of this Newsletter all tape copying will be done by Joe Quintin of Norwich (address inside back cover). Joe has offered to take over the total run of the C64 tape library and I'm sure that we all thank him for this offer, so in future all tape requests must only be sent to him. Not only has Joe taken the reins as tape librarian but has also formatted a new tape catalogue that lists all the C64 programs which will run from tape (Not all programs will run from tape due to calls to disk for other files)

Joe has spent untold hours in working up this catalogue for members and I'm sure this is going to be of great help. If you want a copy of the Catalogue send a C15 tape, plus the return postage and packaging to him. When you have seen the catalogue you may have a choice of any four programs at one time. Once again many thanks to Joe for offering this service to members.

HAM Radio disks for the C64

I'm sure, from the number of calls we receive, that many of you are interested in Ham Radio. Sadly, the Ham Radio disk is no longer available from your librarian. However, after many phone calls, letters and exchanges of disks with Jim Mahoney (G6FLC) in Essex and a lot of help from Joe Quintin who spent untold hours sorting programs for me, I can now unfold a new section of the C64 Library.

The Ham Radio disks will only be available from Joe Quintin, members A - M and from me David Miller, members N - Z. Other librarians will not hold copies of these disks and if they receive requests they will be returned to you uncopied. Usual method of disk supply, only 2 disks at a time plus postage, return label and packaging.

Please note that although one of these programs is copyright, I have been given permission to supply it to members.

A selection of Ham Radio disks should be included in the 128 library in the near future, these will only run in 128 mode, not 64 mode.

128 LIBRARY

by Chris Wright

The 100 PD disks are now on their way to this country. Bob Daly (who is now Assistant Organiser) and myself will be sifting through them and making up as many disks as possible. This may take some weeks so have patience and we will get them into the library in time for the following newsletter.

Remember the problem I had with the 1571 that got an intermittent fault and corrupted disks? Well that CBM Drive Guru, Mick Bignall of Microport kept the drive for three weeks before the fault showed up and then it was a problem with the upper head. Once diagnosed, Mick soon fixed it and all was well. I mention it as two other members have now contacted me with the same problem. We all have elderly 1571s so it may be that a design life fault is now showing it's colours. It manifests itself by not reading the top side of the disk, failing to boot some bootable disks and corrupting disks during a back-up.

128 and AMIGA disk requests. PLEASE NOTE!!!!

For those who send the occasional 128 disk to me and all those for whom I copy ICPUG AMIGA disks please note that large packets are now creating a problem. The Post Office, in their infinite wisdom have downgraded my local General Post Office to a Sub-Post Office. Any parcels/packets that have not been posted through the letter box will not now be taken to this Post Office which is only a quarter of a mile away. Instead they are taken to another General Post Office at Blackpool South Shore some seven miles away. I avoid Blackpool during the season like the plague and will only collect them when I happen to be going there on a specific errand. Will you all please try to post your requests so that they will go through a letter box of 9" width and 2" height. Padded envelopes, small disk mailers etc are fine. Large or thick packets should be avoided. Many thanks.

CW's MUSINGS

by Chris Wright

Not a lot of submissions for the new Superbase disk so there may be room for them on the original three disks which will then be re-released. My thanks to those who did bother to submit programs and tips. A special thanks to Paul Blaire in Aussieland (rather my phone bill than yours Paul). He has also resolved the two version of Superbase V3.0 conundrum. There is no outward indication as to whether you have got the 1571 version with burst mode or the 1571/1581 version without it. (We are talking five and a quarter inch disks now). Apart from the obvious longer disk activity in searches and match situations, you can check the boot block on the disk itself. Those not too sure which one they have enter the monitor and the bootprog. Have it there on the screen when you give Ron Rowley at Precision a ring. Please remember that Ron is a very busy guy and does not want to be pestered by people just seeking confirmation. It seems that one or two wrong copies were sent out by mistake but I am told these went mainly overseas.

One of our members is submitting a new database program. Although it is not another Superbase, it is P.D. and has some very nice functions. This will be going in the library and an article about it will appear in the Newsletter.

My thanks to Ken Turner for being the only one who bothered to submit anything to be inserted in CCI or AUI Magazines. Is there no member out there able to write an article on any machine that would prove of use or be informative to others? I can't believe that all those computer users, Plus/4, C64, C128, AMIGA have nothing of value to offer other users.

THE MOUNTLIST - WHAT'S IT ALL ABOUT?

By Ken Turner

In the last thrilling episode I attempted to shed some light on the Startup-Sequence. Now that you have had a chance to explore all the benefits of your own customised sequences I would like to explain two commands which were touched on in some greater depth. These are the commands BindDrivers and Mount.

The Amiga, as you will have found out for yourself by now, is an intelligent beast but it can become confused when you find your bank balance is full to overflowing [what? - Ed]. The first thing that any self respecting Amiga owner would do is go on a spending spree and bolt on a few bits and pieces of extra hardware. Most of these items will be auto-configuring and as such will allow the system to load the appropriate software to manage them (their drivers or handlers). All you need do is remember to leave the command BindDrivers in your startup-sequence. When your Amiga boots, BindDrivers tells it to load almost all of the handlers required to run those add-on devices. I use the phrase "almost all" because BindDrivers does not work in every case. You can make the Amiga recognise these nonconformists by using the Mount command. A classic example of this would be a hard disk which, if your bank balance is high enough, could be as much as 300MB or more. Using BindDrivers would allow you to use such a large single storage area O.K. but wouldn't it be nice to partition your disk into more manageable segments. This would allow you set up portions of the device for graphics, sound, utilities and demos etc. This would make it easier to back up such a large drive. I myself am fortunate to own two forty megabyte winchesters. The first has a very small slow-filing area set aside for booting, the rest uses the much more powerful fast filing system (the Amiga as yet will not boot from a disk which uses the fast filing system). [Hey, mine does! - Ed] The bootable portion is called ABOOT: and the largest partition is called DH0:, the second drive is called DH1:. Notice the colon after the name which lets the Amiga know it is a device. These names are used only in the Mountlist and any calls to DOS such as LIST DH1:. The name of the drive when you see it on your workbench screen can be something completely different. I have left ABOOT alone but DH0: is called SPIRIT1 and DH1: is SPIRIT2. If you then decide to do a back-up of all your valuable data, you are no longer tied to backing up the whole 300MB but can simply back up the partition(s) required. I will now give you a guided tour of a part of the mountlist which was supplied with my hard drive interface.

/* MountList for V1.3 */

/* spirit1 */

DH0:

Device = stdisk.device

FileSystem = 1:FastFileSystem

DosType = 0x444F5301

GlobVec = 1

Priority = 10

Unit = 0

* see note

Flags = 0

Surfaces = 6

BlocksPerTrack = 17

Reserved = 2

Interleave = 0

LowCyl = 6

HighCyl = 818

Buffers = 30

BufMemType = 0

Mount = 1

StackSize = 4000

#

/* spirit2 */

DH1:

Device = stdisk.device

FileSystem = 1:FastFileSystem

DosType = 0x444F5301

GlobVec = 1

Priority = 10

Unit = 1

* see note

Flags = 0

Surfaces = 6

BlocksPerTrack = 17

Reserved = 2

Interleave = 0

LowCyl = 0

HighCyl = 818

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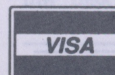
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```

Buffers = 30
BufMemType = 0
Mount = 1
StackSize = 4000

```

#

/* HDA-506 Example Mount Entry For SlowFileSys And AutoBooting*/

ABoot:

```

Device = stdisk.device
Priority = 10
Unit = 0 * see note
Flags = 0
Surfaces = 4
BlocksPerTrack = 17
Reserved = 2
Interleave = 0
LowCyl = 0
HighCyl = 5
Buffers = 30
BufMemType = 0
Mount = 1
StackSize = 4000

```

#

/*Mountlist entry for a recoverable Ram Disk*/

RAD:

```

Device = ramdrive.device
Unit = 0
Flags = 0
Surfaces = 2
BlocksPerTrack = 11
Reserved = 2
Interleave = 0
LowCyl = 0 ; HighCyl = 79
Buffers = 5
BufMemType = 1

```

#

The first line is a comment which must start with /* and end with */ as in the C language. Then comes the device name. As you can see this mountlist has four entries, DH0: DH1: ABOOT: and RAD:. The names all finish with a colon to say "I am a DEVICE" as mentioned earlier. There are two kinds of file systems currently in use. The kind which floppy drive use (which is kind of slow!) and the fast filing system available to anyone with a hard disk and workbench 1.3. This organises the disk structure differently and will be available for floppy drives when workbench 1.4 finally sees the light of day. DOSTYPE, if it is included, should be left alone as should the GlobVec entry. Priority tells the computer how important a certain task is in the scheme of things and is normally left as 10. The next line tells the Amiga which handler is required to make use of that device. If you are supplied with a special device handler, put it in the DEVS directory with all the others. As you can see from the above examples, each device requires a specific handler to suit. The hard disk I own uses the ST-DISK.device (not that kind of ST!! it stands for Spirit Trackdisk) and RAD uses the ramdrive.device.

* (NOTE) The following line describes the type of device to the Amiga. In general it does not denote the first of a certain number of similar devices.

HOWEVER in some cases, notably the Spirit driver, IT DOES. I can only comment on my particular case - you will have to check to see if this applies to the specific driver which comes with your hardware. I tried editing the mountlist to show a unit number of 1 for both hard drives, mounted DH0: and DH1:, typed FORMAT DRIVE DH0: NAME SPIRIT1 FFS NOICONS and was mildly surprised (I really mean horrified!!) to see DH1: merrily formatting itself. So be careful to follow the instructions supplied with the hardware. It just proves that nowt's standard.

A unit number of 0 relates to RAD. ST506 hard disks use a unit number of 1. The other types of hard drive i.e. SCSI usually use 3 and floppies on the whole have a value of 2. The flags option should be left as it is. In the case of the RAD entry it is normally set to 0 which AmigaDos recognises as a bootable device. The Surface entry is the number of physical surfaces on the disk which, in the case of a hard drive, are arranged in the same way as a stack of records with read/write heads between them. The entry for DH0: and DH1: are set to six which shows that the drives have three platters in each. The BlocksPerTrack keyword tells how many blocks fit in each of your disk's tracks. It is normally set to 17 for MFM drives or 26 for RLL encoded drives. Cylinders 0 and 1 are reserved for system use. The Interleave should be left alone as it relates to the speed of communication between the hard drive and the disk controller. An interleave factor of 0 lets AmigaDos know that the

transfer rate is fast enough for it to be safe to store logically sequential blocks of data on physically sequential blocks on the disk. If the interleave is set to 3 then AmigaDos will leave at least two physical blocks on the disk between two logically sequential blocks of each file. LowCyl is the first cylinder (a total of corresponding tracks on a disk) of that partition. HighCyl is the last cylinder of that partition. This is how you divide your hard disk into what the Amiga sees as independent drives. If you look at the above mountlist you will see that on the main drive there are two partitions. ABOOT: starts at cylinder 0 and ends at 5. DH0: starts on track 6 and uses the rest of the disk up to cylinder 818. There are actually 820 cylinders on the disk but the last two have been set aside for parking the heads. Using the same method you can divide your disk into as many partitions as you like. The number of buffers on the following line help to speed access times. The Amiga keeps a copy of the last few disk tracks which were accessed so the more buffers you allocate the better. There is a memory overhead of 512 bytes for each buffer. It's a good idea never to use less than 5 buffers. You can always add more by using AddBuffers from the C directory if you need to. BuffMemType allows you to choose which type of memory the buffers use. If you use 0 or 1 the Amiga will choose between chip and fast memory. You can force it to use chip only memory by changing the entry to a value of 2 or 3. A value of 4 or 5 will only use fast memory. Unless you need to reserve chip memory i.e. for DPaint II/III, leave it set at 0. The last two entries Mount and Stacksize only apply to the Spirit setup as far as I can tell. The very last thing you will see is a # mark which denotes the end of that mountlist entry. Easy isn't it?

STARTUP

by stuart johnstone (lcd)

Ken Turner's first article on startup-sequences prompts me to write briefly about a PD program called Startup. This utility allows the use of up to five different startup-sequences on the same disk. I haven't got to five yet - I guess having so many is for all you rich autobooting A2000 hard disk owners - but I've found it pretty handy none the less.

For example: I use Scribble! a lot and since I usually have enough memory spare I like to have the dictionary in RAM. However this is not always the case and if I want to run Analyze! too or just want to use Scribble! to print out a Read.me or two (it's pretty good for this) and not bother with the spelling, I don't want to waste time or memory copying the dictionary. With

startup I can choose which option with just one mouse click. In the same way I can choose to transfer the whole system to RAD: (or VD0:) or not, and whether to have extra utilities like DMouse running or a bare bones system.

The Startup program itself can be placed wherever you want but the s: directory is as good as anywhere. It is also necessary that Execute should be in the c: directory (if you have renamed it Ex or something this is OK, you just have to tell Startup the new name). A short startup-sequence calls Startup, and for the amnesiacs amongst us this can include a list of the options. For example, it could read:

```
echo "Workbench Disk...Select Option:"
echo "1. No frills Workbench"
echo "2. Workbench with DMouse and VirusX"
echo "3. Workbench to RAD:"
:s/Startup 10 3 <Execute's new name, if you've changed it>
```

The parameters following Startup are the number of seconds delay before it defaults to sequence 1. (1 to 99 seconds) and the number of sequences available (2 to 5). It isn't essential to have the startup-sequence short and if you have things you want to do every time (say, mounting VD0:) you can do this too. The only essential is the obvious one that Startup is the last command.

Startup now displays a box, mid-screen, which looks something like:

```
: Startup 1 :
: Startup 2 :
: Startup 3 :
:      01 :
:      _ :
:      _ :
```

Each of the 'Startups' is a gadget and the choice is made with a single left mouse button click on the selected Startup. The numbers at the bottom count off the seconds until the default (startup.1) is automatically run. Having been given the choice Startup now looks in the s: directory for the chosen sequence. These are named 'startup.1', 'startup.2', etc.. and are your normal startup-sequences less anything you've already run. OK Ken, back to you.

Startup is available on ICPUG disk Utilities_9. (This disk also contains a system-configuration file which gives a taller and wider screen (83 columns - great for word processors) and a really excellent version of DirUtil - how can you not send for it?)

MID-THAMES GROUP NEWS

by Mike Hatt.

The March and April meetings of our group had a 'fair-to-middling' attendance, and anyone who couldn't come certainly missed some really amusing, and informative, presentations by Ariadne's Dave Parkinson with his video disk control in March and Jim Hawkins demonstrating Opus-1 to create MIDI sound on the Amiga in April.

Dave likes the same sort of weird humour that I do - later on during the March evening he revealed to a couple of us the secrets of the self-propelled bathroom duck and the truth about the rumours of The Doomsday Laxative....! His demonstration of the way in which the Amiga can be used to control a video disk with a program which can jump back and forth on the disk, was rivetting and had us all in stitches at many points - one flick of a button for an endless repetition of some strange gesture by John Revolting and Olivia Neutron-Bomb, or the shark from Jaws Umpteen sticking its head out of the water three times over, losing all its menace, these were examples of the way in which really comic effects can be created. Dave is a good chap, he let us all play with the program after his talk. This proved there is a little weird streak in most Commodore owners....!

The serious use of such programs is to create interactive videos for training and similar applications. Apparently there is one application for the rapid teaching of the general layout of buildings or even warships, for example - while running the program, the user is not so much taken on a tour as allowed to wander freely, using the keyboard or mouse to go in different directions and being transferred to the part of the disk with the video sequence of the next appropriate room. The Hobbit on the dear old 64 will never be quite the same after that.

Jim's Opus-1 presentation the following month was sensational. Amiga sound freaks drooled over the program which enables even the musically illiterate to compose a good tune if they have it in them - you can 'write' on a stave, input notes and times data, or simply play (against a backing rhythm etc. of your choice) on the keyboard and save your output with the possibility of displaying the score on the Amiga screen. All sorts of sounds are, of course, possible and by recombining tracks some very sophisticated sounds can be built up. The program can remove unnecessarily duplicated notes... It really is all amazing, and the actual music produced in Jim's demo was entertaining in itself. This type of program must have a good future with the Amiga.

This item is going to disk just before the ICPUG National AGM, and the following week is our May meeting. This will be at the end of the PC User Show, and we are having Simon Tranmer as our guest speaker to demonstrate the latest Precision Software products, especially Superbase which we hope will have done well defending its title at the show.

The one sad point is that the Bourne End Youth Club, having revived from total inactivity, have claimed their room back so ICPUG Mid Thames will be in the dressing room for the next few meetings. The room isn't too bad, in fact the power points are better but the room is smaller and those bringing machines have the embarrassing choice of a tortuous route through the kitchen or carrying their kit along the side of the ballroom, to the puzzled stares of the Old Tyme Dancers... 'I say old gal, can't really manage the Military Two-Step when I keep seeing strange fellas with beards and big boxes creepin' about, what?'.

As you will gather, we are on the lookout for a new venue, possibly back nearer Slough, but in the meantime ICPUG members in the area, do come along and see what goes on, even if it does all happen to a distant waltz or foxtrot... The ICPUG Mid-Thames Group meets on the second Thursday of each month at the Bourne End Community Centre (Bourne End is North of Maidenhead, the home of Commodore UK). Telephone Mike Hatt on Farnham Common (02814) 5728 for details.

ICPUG SOUTH EAST MEETS THE SWAGMEN

by Janet Bickerstaff

Once again members of ICPUG South East Group packed their wagons and rolled westward, this time to be greeted by a band of jolly Swagmen. (To the uninitiated - members of the South West Amiga Users Group.)

This band of Swagmen camp by a billabong known as the River Char at, would you believe, Charmouth in Dorset. We found that their territory had been invaded by two other tribes, known as Costains and Matthew Hall, who were engaged in building a bypass, and drainage improvements for the further comfort of the Swagmen. The Koolibar trees have long since gone, probably cut down to provide fossil fuel years ago. The natives trade in a form of currency known as ammonites, which are still to be found on the sea-shore.

The gods of the sea were not happy with the work of the drainage men and had caused their dredger to drag its anchor, depositing large sections of pipework along the beach. The drainage men were not happy!

Enough of this nonsense! This time an even larger group of South East members and their wives stayed at the Queen's Armes Hotel for a weekend of Computers and Gourmet Food, and some were boarded out at Hensleigh Hotel - just down the road. They were joined during the day by members of the South West Group.

John and I and Tim Arnot went down on the Thursday. Naturally the computers were set up immediately, but I did manage to drag the men away on Friday afternoon and we took a little exercise walking on the cliff top at Sidmouth before indulging in a super cream tea at The Barn at Bowd. This was approached by what was marked as a B road, but actually did have grass growing down the middle.

The weekend proper began with the arrival of the rest of the party during Friday afternoon. Whilst we were all enjoying an excellent dinner our host, Pete Miles, announced he had a surprise for us. We were delighted when Simon Tranmer walked in. His latest software production, Fiona Jane, had been delivered the previous weekend, and Simon was able to join us.

After dinner certain members of the party got down to the serious business of discovering the extent of Pete's wine cellar. I am told the last person got to bed around 3 am. There was only one casualty from this exercise - Pete Miles himself!

Iain Graves set up his MIDI equipment in the lounge and was happy to explain

his system to other enthusiasts. Iain has recently commenced trading as the Micron Computer Centre, dealing in CBM equipment. Another ICPUG member, Mike Brown, was there. He has a new company, Diamond Computer Systems, which you will be seeing advertising in all the computer magazines. Both offer discounts to members.

With John Bickerstaff as Master of Ceremonies, the computer sessions got under way on Saturday morning with Harry Broomhall demonstrating the capabilities of Superpic, an amazing digitizer produced by Harry and Richard Leman of JCL (see David Annal's review elsewhere in this issue). This is now available at a discount through ICPUG - contact the Discount Officer.

Brian Fowler was next with a talk on actually setting up and using a database, which was very helpful to those of us who are not so bright as some of the audience! Simon joined in the general discussion which followed, after all, he and Tom Cranstoun did write Superbase! The party broke up for a generous buffet lunch, accompanied by drinks from the bar, or coffee as required.

After lunch David Annal had the audience enthralled with a demonstration of Deluxe Paint III. He showed us drawing techniques, with animation. Firstly, a scene of an archer aiming at a bird, missing, and getting something nasty in his eye. But what really brought the house down was a cuckoo clock. When the hour struck it was not a bird which flew out, but the face of your revered Chairman! This was an improvement on the demonstration shown recently at South East when John's head appeared on a wood nymph!

Tom Chorley talked us through the use of the Sage Accounting package on the Amiga 2000. He was assisted by Barry Miles, who pointed out the advantages of the package and the necessity to consult your accountant before embarking on the system. Tom runs a crane hire business using this package and members found his experience most helpful.

There followed an animated discussion on the future development of the National newsletter, led by no less a person than the Editor himself. Some requested more knowledgeable comments on software, whilst others pleaded for more articles for the 64 and C128. A voice was heard from the back saying "Please can you put in something that I can understand!" (That's why I write the odd article - at least I can understand it!)

Having worked up an appetite, it was time to make the big decision - what to choose for dinner from the extensive menu. It was not a serious meal. A certain medical gentleman decided it was time to tease Debbie, our waitress. Knives and forks disappeared, there were requests to repeat the sweet menu over and over again, until she threatened that he would be stabbed to death with a spoon!

The following morning some members of the party took a brisk walk to the beach, just to prove that they were awake. Simon arrived from the hotel down the road and immediately retired to his Compaq 386/20 for a fix on Cix. He has a modem which operates at a fantastic 9600 baud rate.

Tom Cranstoun started the morning session showing us his IQ. That is, his Sharp IQ, we all know how clever he is! Although the BBC runs on post-it notes, Tom finds this electronic Filofax invaluable and would be lost without it. He is currently writing a program to transfer information between from the IQ and the Amiga and showed us the progress so far. Ken Turner has done the graphics and Simon came up with various ideas. One of which was Japanese characters to enable the Sharp user to call for technical support!

As a change from computers, Mick Jones brought along a vast array of telephone equipment. An expert in this field, he showed us various set-ups using personal exchanges, with all sorts of possibilities, including alarm systems to automatically call the police or fire station, and a printer to record details of calls. He also explained the new Sharp system which will accept calls or fax.

After yet more food (and drink), Steven Smithers told us about the Open University course which he has just commenced. Apparently it has not been updated since being written in 1979, and he was not too happy at learning Pascal when he would much rather program in C! However, it is all in a good cause, and if he perseveres long enough will enable him to get a degree.

It was time then to wrap up the proceedings for another year. The computer people had a great time. The non-computer people had a restful break. All enjoyed the excellent food. Some had massage treatment by Pete's daughter, Phillipa Miles, who is training as a beauty therapist and will have her own salon at the hotel shortly.

ICPUG South East will be back at The Queen's Armes in April 1990, but welcome visitors to their Club nights at the Biggin Hill Library, Kent, any Thursday except the first Thursday of the month. The Swagmen (South West Amiga Users Group) meet at The Queen's Armes Hotel, Charmouth, Dorset, on the second Sunday of the month and welcome new members.

SIMP

by Richard G. Hunt

[Editors note: This article is reproduced with permission from the ICPUG South East magazine]

I first came across SIMP last year, but precisely where I cannot recall. No doubt the source - rightly in my opinion - wishes to remain in anonymity. In view of its connections, at least in the form given here, with the data processing world it seems an appropriate item for inclusion in these pages. Naturally it is ingenious in its SIMPlicity. It is horrendous in its IMPLICATIONS. By and large it is eminently forgettable.

Curiously though it lends itself to computerisation. For that reason I have programmed it twice, as if once was not once too many times! The BASIC version is for those without imagination. The Forth version is for the men and women among ICPUG members. Both versions observe, I believe, all that was said in earlier issues about TDP. (Top Down Programming. Remember?)

Actually SIMP was not meant to be published and you should count yourselves remarkably fortunate that I have had the time and energy to bring it to you. Some three or four weeks ago (October 1988, that was) I completed the programs and wrote this article. The programs went straight on to my library disks. Unfortunately, in the space of about five days the originals and the article vanished off the face of the media (disk and backup). I put it down to my three youngest children having 'discovered' the computer, or at least games on the computer. When I came to use the one disk the next weekend, it was curiously and irrevocably corrupt, full of 01s and a dozen unreadable sectors. The backup disk literally had been stamped into the ground. No end of disk programs were brought to bear to no avail. I was determined however to bring you the extraordinary facts about SIMP. So here they are.

SIMP stands for Simplified Modular Prose Writing System. Using it anyone able to count up to ten can write 40,000 well balanced, impressive and quite meaningless sentences. (Seems ideal for a magazine. [Found out! - Ed]) To put SIMP to work, arrange the modules in A, B, C, D order. Take any four digit number - randomly generated or not, e.g. 1988, and read phrase 1 off Module A, phrase 2 off Module B and so on. The result, God help us all, is a SIMP sentence. Given either version of the program and a printer, you can go on with this nauseatingly fascinating creation of DP pap until your printer ribbon or nerve (whichever is the shorter) expires! The most bold can (blanch!) extend the system by converting to hexadecimal numbering.

Here are the tables:

SIMP Table A

- 0 In particular
- 1 On the other hand
- 2 However,
- 3 Similarly,
- 4 As a resultant implication
- 5 In this regard
- 6 Based on integral subsystem considerations
- 7 For example,
- 8 Thus,
- 9 In respect of specific goals,

SIMP Table B

- 0 a large proportion of the interface coordination communication
- 1 a constant flow of effective information
- 2 the characterisation of specific criteria
- 3 initiation of critical subsystem development
- 4 the fully integrated test programme
- 5 the product configuration baseline
- 6 any associated supporting element
- 7 the incorporation of additional mission constraints
- 8 the independent functional principle
- 9 a primary interrelationship between system technologies

SIMP Table C

- 0 must utilise and be functionally interwoven with
- 1 maximises probability of success and minimises cost/time for
- 2 adds explicit performance limits to
- 3 necessitates that urgent consideration be applied to
- 4 requires considerable systems analysis to arrive at
- 5 is further compounded, when taking into account of
- 6 presents extremely interesting challenges to
- 7 recognises the importance of other systems and the need for
- 8 effects a significant implementation of
- 9 adds overriding performance constraints to

SIMP Table D

- 0 the sophisticated hardware solution.
- 1 the anticipated fourth generation equipment.
- 2 the subsystem compatibility testing.
- 3 the structural design, based on system engineering concepts.
- 4 the preliminary qualification limit.
- 5 the evolution of specifications over a given time period.
- 6 the philosophy of commonality and standardisation.
- 7 the total integrated system configuration.
- 8 any discrete configuration mode.
- 9 the total system rationale.

SIMP FORTH VERSION. DATA PHRASES IN SCREENS 5-8

SCR # 1

- 0 (2@ RGH 870906)
- 1 FORTH DEFINITIONS HEX
- 2 CREATE 2@ SMUDGE
- 3 A1 C, 00 C, 48 C, F6 C, 00 C, D0 C, 02 C, F6 C, 01 C,
- 4 A1 C, 00 C, 48 C, F6 C, 00 C, D0 C, 02 C, F6 C, 01 C,
- 5 A1 C, 00 C, 48 C, F6 C, 00 C, D0 C, 02 C, F6 C, 01 C,
- 6 A1 C, 00 C, 95 C, 01 C, 68 C, 95 C, 00 C, CA C, CA C, 68 C,
- 7 4C C, 1051 ,
- 8 : NOT 0= ;
- 9 : 2- 2 - ;
- 10 : TASK ;
- 11 -->
- 12
- 13
- 14
- 15

SCR # 2

- 0 (BRODIE'S FILE) FORGET TASK : TASK ;
- 1 DECIMAL 0 VARIABLE PHRASE 64 ,
- 2 64 CONSTANT R-LENGTH 1024 R-LENGTH / CONSTANT REC/BLK
- 3 5 CONSTANT FILES 4 REC/BLK * CONSTANT MAXRECS
- 4 0 VARIABLE #RECORD 0 VARIABLE KIND
- 5 : WHAT PAD 80 + ;


```

6 : RECORD #RECORD @ REC/BLK /MOD FILES + BLOCK SWAP
7   R-LENGTH * + ;
8 : FIELD 2@ RECORD + SWAP ;
9 : TOP 0 #RECORD ! ; : DOWN 1 #RECORD + ! ;
10 : .FIELD FIELD -TRAILING TYPE SPACE ;
11 : .NAME PHRASE .FIELD ;
12
13 -->
14
15

```

SCR # 3

```

0 ( .RANDOM NO. GENERATOR - DAVE MIDDLETON )
1 1234 VARIABLE SEED
2 : RANDOM SEED @ 1021 * 41 + DUP SEED ! ;
3 : RND RANDOM U* SWAP DROP ;
4 : CLS 147 EMIT ;
5 : HEADING . SIMP - SIMPLIFIED MODULAR PROSE WRITING SYSTEM ;
6 : TITLE CLS HEADING CR CR
7 . ANYONE ABLE TO COUNT UP TO TEN CAN WRITE CR
8 . 40,000 WELL BALANCED, IMPRESSIVE AND CR
9 . QUITE MEANINGLESS SENTENCES. CR CR
10 . ENTER ANY FOUR DIGIT NUMBER OR LET THE CR
11 . COMPUTER GENERATE ONE. CR ;
12 : GETANS . DO YOU WANT TO ENTER A NUMBER? KEY ;
13
14
15 -->

```

SCR # 4

```

0 ( SIMP - SINGLE PASS; AUTO REPEATS! )
1 : MAKENO 10000 RND ;
2 : TESTANS 89 = NOT IF MAKENO
3   ELSE CR . ENTER YOUR NUMBER CR INPUT THEN ;
4 : A DUP 1000 / SWAP ;
5 : B OVER 1000 * - DUP 100 / SWAP ;
6 : C OVER 100 * - DUP 10 / SWAP ;
7 : D OVER 10 * - ;
8 : PARSE ( N -- ) A B C D ;
9 : REF 3 16 * + >R 2 16 * + >R 16 + R > R > ;

```

```

10 : LOCATE #RECORD ! ;
11 : GETRCD >R >R >R LOCATE .NAME R> LOCATE .NAME
12 R> LOCATE .NAME R> LOCATE .NAME CR ;
13 : SIMP TITLE GETANS TESTANS DUP. PARSE REF CR CR CR GETRCD;
14 : AUTO BEGIN MAKENO PARSE REF CR CR CR GETRCD KEY DROP
15 ?TERMINAL UNTIL ; ;S

```

SCR # 5

```

0 IN PARTICULAR
1 ON THE OTHER HAND
2 HOWEVER,
3 SIMILARLY,
4 AS A RESULTANT IMPLICATION
5 IN THIS REGARD
6 BASED ON INTEGRAL SUBSYSTEM CONSIDERATIONS
7 FOR EXAMPLE,
8 THUS,
9 IN RESPECT OF SPECIFIC GOALS,
10
11
12
13
14
15

```

SCR # 6

```

0 A LARGE PROPORTION OF THE INTERFACE COORDINATION
  COMMUNICATION
1 A CONSTANT FLOW OF EFFECTIVE INFORMATION
2 THE CHARACTERISATION OF SPECIFIC CRITERIA
3 INITIATION OF CRITICAL SUBSYSTEM DEVELOPMENT
4 THE FULLY INTEGRATED TEST PROGRAMME
5 THE PRODUCT CONFIGURATION BASELINE
6 ANY ASSOCIATED SUPPORTING ELEMENT
7 THE INCORPORATION OF ADDITIONAL MISSION CONSTRAINTS
8 THE INDEPENDENT FUNCTIONAL PRINCIPLE
9 A PRIMARY INTERRELATIONSHIP BETWEEN SYSTEM TECHNOLOGIES
10
11
12

```


SCR # 7

0 MUST UTILISE AND BE FUNCTIONALLY INTERWOVEN WITH
1 MAXIMISES PROBABILITY OF SUCCESS AND MINIMISES COST/TIME
FOR

2 ADDS EXPLICIT PERFORMANCE LIMITS TO
3 NECESSITATES THAT URGENT CONSIDERATION BE APPLIED TO
4 REQUIRES CONSIDERABLE SYSTEMS ANALYSIS TO ARRIVE AT
5 IS FURTHER COMPOUNDED, WHEN TAKING INTO ACCOUNT OF
6 PRESENTS EXTREMELY INTERESTING CHALLENGES TO
7 RECOGNISES THE IMPORTANCE OF OTHER SYSTEMS AND THE
NEED FOR

8 EFFECTS A SIGNIFICANT IMPLEMENTATION OF
9 ADDS OVERRIDING PERFORMANCE CONSTRAINTS TO
10
11
12
13
14
15

SCR # 8

0 THE SOPHISTICATED HARDWARE SOLUTION.
1 THE ANTICIPATED FOURTH GENERATION EQUIPMENT.
2 THE SUBSYSTEM COMPATIBILITY TESTING.
3 THE STRUCTURAL DESIGN, BASED ON SYSTEM ENGINEERING
CONCEPTS.
4 THE PRELIMINARY QUALIFICATION LIMIT.
5 THE EVOLUTION OF SPECIFICATIONS OVER A GIVEN TIME PERIOD.
6 THE PHILOSOPHY OF COMMONALITY AND STANDARDISATION.
7 THE TOTAL INTEGRATED SYSTEM CONFIGURATION.
8 ANY DISCRETE CONFIGURATION MODE.
9 THE TOTAL SYSTEM RATIONALE.
10
11
12
13
14
15

FURTHER THOUGHTS ON KNITTING

by Charles Hooker

Following my article on "Knitting and Computers", I was surprised and not a little delighted to receive a number of letters on the subject. It seems that there is more than one wife who has an electronic knitting machine. My wife's machine is a Singer Memo-Matic 2310. I have printed graphics on a light-weight paper that I bought in a local stationers shop which worked well with the Singer, the weight of this paper was 40/45 gsm, but I believe that airmail weight paper will work equally well.

At this moment in time, I understand there is no other machine which offers comparable facilities to the Singer, but that is not to say that this situation will persist in the foreseeable future.

Let me describe my present set-up. My computer is a 128, which I use with a Philips 8833 monitor. I have two 1541 disk drives, each with Dolphin Dos. I have two printers, both of which are served by a 64K buffer. The main one is an Epson LQ800, with an Extec Super Graphics interface. However, if you use "Print Shop", "Print Master" or "Newsroom" you will find that a 24 pin printer elongates the graphic printout by roughly 10%. This can be overcome by using either roll or foolscap paper but it can still be a problem. You must, of course, use LQ (NLQ) mode, in order to achieve as dense a printout as possible when producing a design to feed into the knitting machine. My second printer is a Star LC 10C. I use this printer principally for graphics because this is a 9 pin printer, and the elongation problem does not arise as with a 24 pin printer such as the LQ800.

At present, I am working on a program to enable anyone using a 128 in 80 column mode to feed in the required measurements of the person, together with the type of garment and style of sleeves, collar and so on, that you wish to knit. You also enter the measurements of your test swatch. The program will print out the number of stitches to cast on and rows to knit. It will tell you when to increase and decrease to obtain the shaping. The program will cover four basic types of garment; cardigan, dress, skirt or jersey, and different styles of sleeves and necklines. However, I am still awaiting formulae for some of the parts of the program from my wife. Finally, the program will print out the pattern. Hence my need for Basic 8.

I have often toyed with the idea of buying an Amiga, but I still think my 128 is an excellent machine and does all that I require of it. It could be argued, I suppose, that if I had an Amiga, I should not need Basic 8. But then, I expect there would be many other things to add to such a system, such as increased

memory and so on. No, I am very happy with my present kit.

Perhaps I should add that the problem that I mentioned in my Basic 8 article has been solved by the introduction of the monitor. My previous screen was an RGB Ferguson TX television which had no horizontal or vertical hold controls. The Philips, however, has not needed any adjustment, strange to relate. I have increased the video RAM of my Commodore 128 to 64K.

I hope that I have given you enough information to enable all those ICPUG members, out there in the great unknown, to add further interest to your hobby. I shall always be pleased to hear from anyone who would like further information or who has any ideas regarding the use of computers in conjunction with knitting machines.

METAL BASHING ON THE AMIGA

I am writing this article for people in a similar position to myself who, after programming in 680x0 assembly language for a number of months, have discovered that the Amiga o/s is rather intrusive and slow. The answer is to ditch the operating system and talk to the hardware direct, [Aaargh! - Ed] but this is easier said than done - particularly as it is a topic not well covered in the Amiga press.

The first thing to do is to purchase the Hardware Reference Manual (published by Addison-Wesley, ISBN 0-201-11077-6), as this is the official guide, and you will find it invaluable, because it contains everything you will ever need to know about accessing the custom chips. It is not, however, written in the form of a step by step tutorial, which makes learning anything from it more difficult than it needs to be.

The first thing to come to terms with is the idea of the special purpose registers. These are all located above memory address \$DFF000, and writing to, or reading from these memory locations is what you actually do when you want to communicate with the hardware. If you include the Hardware/Custom.i file from your assembler you can see the displacements required for the different registers. For example, bpl1pt has a displacement of \$0E0, and therefore its 680x0 address would be \$DFF0E0. A simple way to do this is to place \$DFF000 in a0, and use address register with displacement addressing mode.

However, as far as the custom hardware is concerned the address is simply \$0E0. Therefore, every register has a different address depending on whether it is the 680x0, or the custom chip that is trying to access them. The 680x0

address being the hardware address plus \$DFF000. This is the basic principle behind all direct hardware access.

The next thing we need to know about is the Copper.

The Copper is one of the custom co-processor chips in the Amiga, which mainly deals with the graphics and audio systems, taking control of them, freeing the 680x0 for other processor intensive tasks. Its program, called a Copper List, is defined by you, and it is executed every single frame.

Being a processor it has its own command set, in which there are only three different instructions:

- WAIT for a screen position.
- MOVE data into one of the special purpose registers.
- SKIP the next instruction if the video beam is past a certain point in the display. This is an advanced instruction that I have not actually had cause to use yet, and so I will not deal with it, until I have found a useful job for it, although I suspect that it would be handy for some pretty graphical effects.

These Copper instructions are all two words long and sit sequentially in memory like any other program.

The first instruction to deal with is MOVE. As I said above, the MOVE instruction is used to move immediate data into one of the special purpose registers. As the copper is part of the custom chip hardware, the register address is simply the "displacement" in the include file. These addresses are also listed in appendices A and B in the back of the Hardware Reference Manual.

You will remember that the instructions are two words long. The first word of a MOVE instruction contains the address of the register:

BIT USAGE:

```
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
(      ) (      ) (      ) (      )
( SET   TO   ZERO ) ( ADDRESS OF REG. ) (0)
```

The second word contains the 16 bits of data that you wish to copy into the

register. For example, the following copper list would copy \$25000 into bpl1pt, which sets the pointer for bitplane 1:

DC.W \$00E0,\$0002
DC.W \$00E2,\$5000

You should have noticed that there are, in fact, two Copper MOVE instructions here. This is because bpl1pt actually consists of two parts: bpl1pth and bpl1ptl. This is to allow the hardware to put the bitplane memory anywhere in the lower 512K (ie CHIP RAM), using a 32 bit (longword) address, but more of this later.

The other, relatively simple Copper instruction is WAIT. This is slightly more complicated than MOVE, but it works on the same principle. The first word deals with the beam position:

BIT USAGE:

```

15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
( Vertical Beam Position ) ( Horizontal Beam Position ) (1)

```

The second word deals with making a mask, to determine which bits are being used in the comparison.

```

15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )
( 1 ) ( Vertical Compare Bits ) ( Horizontal Compare Bits ) (0)

```

Basically, you use this second word to determine whether or not you are using the horizontal, or vertical coordinates. If you want to use it then set all its bits; if you don't, reset them. A table might explain this more simply.

Word Value	: Vertical	: Horizontal	:
=====	=====	=====	=====
\$FFFE	: Yes	: Yes	:
=====	=====	=====	=====
\$00FE	: No	: Yes	:
=====	=====	=====	=====
\$FF00	: Yes	: No	:
=====	=====	=====	=====

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There is, however, a slight complication with the wait instruction. Although everything is fine vertically - with 8 bits you can access the 256 lines of the PAL (or 200 lines of the NTSC) screen - horizontally, there are only 7 bits. This means that every one represents 4 low resolution pixels, or 8 high resolution pixels.

There are only two more things that we need to know before we can use the Copper, and they are starting and stopping it.

To start the copper after a reset, there are three things that you have to do. Firstly, you should point the Copper at your Copper List (your Copper program), secondly you should access copjmp1, to set the Copper program counter, and thirdly you should enable Copper DMA in the DMA control register.

A sample program to do this would be:

```
MOVE.L    MyCopperList,cop1lc(a0)    ;Point Copper
MOVE.W    copjmp1(a0),d0              ;Force Counter
MOVE.W    #$8380,dmacon(a0)          ;Enable all DMA
```

There is no specific instruction to stop the Copper, so a bit of lateral thinking is required. As the Copper is automatically returned to the beginning of its List at each vertical blanking interrupt (ie the start of each display frame) to make it stop until then, you simply wait for the impossible. This is line 255, horizontal position 254, which corresponds to the instruction:

```
DC.W      $FFFF,$FFFE
```

Therefore, you should end every Copper List with this instruction.

There now follows a complete sample copper list program:

```
incdir    "include/"
include    hardware/custom.i
include    exec/exec
lib.i

CALLEXEC  Disable                ;Very messy - but simple
lea       $DFF000,a0
move.w    #$1200,bplcon0(a0)
move.w    #0,bplcon1(a0)
move.w    #0,bplmod(a0)
move.w    #$0038,ddfstrt(a0)
```

```
move.w    #$00D0,ddfstop(a0)
move.w    #$2C81,diwstrt(a0)
move.w    #$F4C1,diwstop(a0)
move.l    #$21000,a1
move.l    #$00000000,d0
move.w    #2000,d1

ClearLoop
move.l    d0,(a1)+
dbra      d1,ClearLoop

move.l    #$20000,a1                ;Copper List Address To Be
lea       MyCopperList,a2          ;Copper List Data

CopperLoop
move.l    (a2),(a1)+                ;Copy a word
cmpi.l    #$FFFFFFFE,(a2)+         ;Check for end
bne       CopperLoop              ;Loop until finished
move.l    #$20000,cop1lc(a0)       ;Write to Copper Location Reg
move.w    copjmp1(a0),d0           ;Force Copper PC
move.w    #$8380,dmacon(a0)        ;Enable DMA
Done bra   Done                    ;Loop for ever

MyCopperList
DC.W      $00E0,$0002              ;MOVE $21000
DC.W      $00E2,$1000              ;INTO BITPLANE 1 POINTER
DC.W      $0180,$0FFF              ;MOVE WHITE INTO COLOR00
DC.W      $9601,$FF00              ;WAIT FOR LINE 150
DC.W      $0180,$0000              ;MOVE BLACK INTO COLOR00
DC.W      $FFFF,$FFFE              ;END THE LIST (WAIT FOR EVER)
```

The first section of the code sets up a bitplane, and I will deal with this next time. Please note that any disturbance you may get on screen (or even GURU's or system crashes) is due to the nasty o/s refusing to give up its hold on the system. Shutting it out completely will also be covered as soon as I work out a completely reliable method. For the moment, I just do a Disable() call which is an extremely messy and horrible way of doing things, [damn right - Ed] but it is quite reasonable for the time being.

Until next time, try to work out what is going on at the beginning of the program, referring to your Hardware Reference Manual (highly recommended as the only source of information as far as I know) for details of the registers.

SUPER* CORNER

by Brian Fowler

Well, the honour of editing this time-honoured section of the Newsletter has now passed to me; why him, you ask. Well, I suppose I am a fairly average user of Superbase and Superplan on the Amiga and have a healthy interest in most things to do with computing and Commodore computing in particular. I have no axe to grind, am not connected with Precision Software (except for beta testing some products), and am not susceptible to bribery or any forms of coercion (although I never refuse a drink!)

As I said above, I have a reasonable grasp of Superbase and Superplan on the Amiga; until recently, I had never even SEEN Superscript, let alone used it. I wondered about it though; after all, most people who have used it seem to sing its praises. What could be the attraction? Finally I obtained a copy - yes, paid for - and ran it on my C128. Then I sat down to read the manual. First, a dislike; the manual expressly forbids the making of copies of the disk. Don't get me wrong, software piracy is theft, but I do not like to put any disk in any machine, knowing it's the only copy I have. I have used the program for two evenings now, and I must say I am impressed. Not as easy to use as the editor I use on the Amiga (UEdit), but at least as good as anything I have seen on an 8-bit micro. The manual is well presented - spiral bound, pages well laid out - but I feel more reference material could be included. Everything seems to be in the manual, but sometimes well hidden.

With Superscript came Superbase for the 128; not a patch on Superbase on the Amiga, and the same criticisms of the manual. In particular, I have not found a way of accessing my second drive (8250 - brainbox interface) from within the program - any help here would be most gratefully received! I've been told that 'Superbase - the book' is indispensable. Is it? Write in and let me know.

I must stress that the observations above are based on two evenings with the programs for the 128. I'll let you know my feelings about the products next time, after more use.

So, I have an Amiga with Superplan, SB Personal, SB Professional 3, the Forms Editor and the Runtime system. On the 128 I have SB128 and SS128. With all this, we should be able to tackle most things of interest to members, don't you think?

Please write in and let me know the type of thing YOU would like to see in here. In particular, you old hands can help me a lot with the 8-bit products.

I am writing this a week after the above, a week in which I have exported a .25Mbyte file from SBase on the Amiga, transferred to 8250 format and imported it into SBase128. I can now use the 8250 (device 8) by loading SBase from the 1571 drive and then switching on the 8250. With the BrainBoxes interface, a parallel device will take precedence over a serial device with the same address... Fine, but there MUST be a better way!

On the 128, Superbase is a lot slower than the Amiga but I think we must blame the hardware for this. The 128 is simply no match for an Amiga with a hard drive using the 1.3 Fast Filing System. Having said that, it is reasonably easy to persuade the 128 version to do most of the things I use the Amiga version for.

I have also been using Superscript; indeed I am using it now. I have explored the macros, and searched out a back issue of the Newsletter in which a macro written by Pete Miles appeared. It is quite impressive to have your wordprocessor printing a calendar for you!

I think a good item for this column would be the developing of a database from scratch, on both the Amiga and 128 versions. In this way, perhaps we could highlight the similarities and point out the differences in the two versions which should be of help to those moving up to the Amiga. Write to me and let me know what you think.

That's all for this time, but remember this is YOUR column... let me have your contributions but remember please, if it's more than a few lines long, send it on disk. Include an address label and return postage if you want your disk back.

DELUXE PAINT III - ELECTRONIC ARTS

by David Annal

To anyone who has never heard of DeluxePaint, let me say at once that I believe it is quite the best paint program ever written! After that I could add, for the Amiga but the statement could stand by itself. The present version, as the title implies, is the third update and it has just been released by Electronic Arts.

All of the facilities of version II have been retained including full perspective drawing and stencilling. Several new ones have been added. In this review I have only the space to deal with the changes but if you don't know what is available in the standard package have no hesitation in buying this one!

DPaint now supports the half-bright mode giving 64 colours, the second 32 being half as bright as the first. Gradient fills can use this for much smoother results. Overscan is possible on all paint modes. The whole screen can be flipped at will avoiding the need to pick it up as a brush first. There are now six possible colour range settings in the palette. A Lasso brush pickup avoids having to use only rectangular brushes. The brush can now be bent and can be outlined with a single pixel of another colour, useful for making lettering more readable. Speaking of letters, the whole font loading system has been changed making it very easy to get fonts off another disk without having to ASSIGN. There is no limit to the number of fonts available and the program does not crash like it did before when the list reached the bottom of the page. It is also possible to preview the fonts before actually loading them into memory and to use full colour ones. A Colourfont program is provided to deal with the latter. A new TINT paint mode has been provided and several new ways to perform a fill. The continuous draw tool has been split into two halves and now gives the facility of an immediate fill once the shape has been drawn. A spacing feature has been added to the straight line and arc draw modes. This is useful when drawing with animated brushes. Which brings me to...

The most notable additional feature of DPaint III is the provision of animation. It is easy to make up animations which conform fully to the recognised ANIM file format. A whole new menu deals with this facility. The number of frames possible is limited only by memory available. When saving frames compression can be used. This records only the changes from the previous frame and so allows much longer animations to be made than would be possible otherwise. The heart of the animation section is the MOVE menu. This allows the path of a brush to be defined in 3D with perspective changes performed as they move. Animated brushes can be drawn into the frames auto-

matically or made to follow the path of a curve outlined by a drawing tool. Provision is made to animate away from the drawn frame or towards it. Also, the speed of animation can be varied to give acceleration and deceleration, making the bounce of a ball or the swing of a pendulum more realistic. Having drawn a sequence of pictures, the whole can be picked up as an animated brush and re-animated. Then the whole can be picked up as an animated brush and re-animated. Then the whole....

What won't it do? No facility to add sound to animation. Does not support HAM mode. On the A1000 one of the animation facilities using the left Amiga key will not work (fine on 500!). This is no real loss as it is possible to get round it.

In all a very satisfactory improvement to the older programs and highly recommended. Together with DeluxePhotolab it forms a complete art package that will do anything. (The latter provides HAM mode, and the facility to alter colour rendering and formats, etc. It also contains Posters which will convert the printout size of a picture from the minutest possible up to wall size!)

What about DPaint IV? Dan Silva, the author, tells us that he is very interested in music and has been thinking of adding music to animated light shows??

Thanks to EA for the review copy. The program is available on unprotected disk and includes an animation and art disk as well for the very reasonable price of £79.99. It is possible to get an upgrade from DPaint I for £50 and DPaint II for £30 + £5 carriage. Information from EA on 0753 46465.

BRIAN'S BLUNDERINGS

by Brian Fowler

Impaired Vision Project

So far, I have received offers of help from Zak Beck, Ian Cassidy, Ronald Key and J E Siddle. My thanks to these members, and I hope to have tested the project on at least one machine before the next Newsletter.

Learning 'C'

I was contacted by two members commenting on the 'Blunderings' article in the January issue, both taking me to task over my misuse of 'C'. Chris Green sent me a mailbox on CIX which is too long to reproduce here, so I hope he won't mind if I extract the salient points.

Chris's first point is that comments are preferred indented with the code; I agree but it is difficult to preserve this in production of the Newsletter. Secondly, I should have used a #define for the variable 'pos' to allow for easier maintenance in future. I hold my hands up here, Chris is quite right.

Chris indicates that he would give pointer variables names to indicate that they ARE pointers, for example appending ptr to each name. I take the point, but a large number of the names are forced on programmers by the Amiga include files. Chris also expresses a preference for shorter names to allow for example the two if() statements at the start to fit on one line each. Again, we are stuck with the names in the header files. I should point out here that Chris does not use an Amiga, so couldn't know about the contents of the header files. [A recent discussion on variable names on CIX highlighted different people's naming conventions, including (seriously) eric-the-int, eric-the-pointer, eric-the-structure and eric-the-half-structure! What's yours called? - Eric-the-Ed]

Finally, Chris says I should have used != rather than > in the tests comparing with NULL. He is quite right, and my excuse is unfamiliarity with C's syntax. Equality is denoted by '==', and NOT is denoted by '!'; so I tried to code 'not equal to' as '!='; not surprisingly, my compiler objected to this. So, I used something else - I'll know better next time.

Tim Magee wrote in similar vein, making the following points (among others).

A comment explaining the significance of the '33' in the OpenLibrary calls would help. This refers to versions of the operating system and is designed to

allow a program to check that the machine is running the required version of the OS software.

Tim takes me to task because the code does not address the situation of the Active Screen having no windows; while this can be the case, and would almost certainly result in fireworks if my program were launched in this situation, the program was intended to be run from Workbench or as a direct command in the CLI. In both cases, there must be at least one window, so no problem.

Tim makes the point about my comparisons rather well -

"The only comparison operators considered valid on C pointers are == and !=, so while(Next>NULL) is a bit cheeky."

Finally, some remarks from Tim which I confess I do not fully understand:

"There are lots of casts which seem to be unnecessary. In addition, one of :

```
AScreen = (struct Screen *) IntuitionBase->ActiveScreen;
```

and

```
FWindow = (struct Screen *) AScreen->FirstWindow;
```

is clearly wrong. If the first were correct, then the cast would apply after the -> operator, i.e. to ActiveScreen in the first example (in which case it is unnecessary) and to FirstWindow in the second (in which case it is wrong). Similar reasoning if the second is correct."

That's what Tim wrote; I think I grasp the argument, but I'm not sure. How about some further explanation from Tim (or anyone!)

Alternatives to 'C' ?

While I wait for the release of Amiga Comal (see Brian Grainger, Comal Corner, March issue), I have been able to see HiSoft Basic in action. A member of our South West group recently bought this product and showed it at our last regional meeting. It certainly seems a lot better than AmigaBasic, and I understand it has the capability to compile stand-alone programs. We did not have a lot of time in which to evaluate the product so perhaps a user of HiSoft could write a review for the Newsletter. It could be the answer to many members' prayers.

Data Transfer - MSDOS 5.25"

Following my article on p58, January 1989 Newsletter, members may be interested to know that I now have the additional capability of reading and writing MSDOS 5.25" disks, so if you need data transferred to or from this format, follow the instructions in the above-mentioned article. Remember to include return postage.

QUIET FAN : C128D.

by Tony Wright

After purchasing my C128D last year, I soon became aware that we two were not going to be friends until I cut down the noise from the built-in fan. Tim Arnot was kind enough to give me some advice and I commenced my research, if you can call it that, and eventually settled on a design which satisfied both my needs for a bit of quiet and needs electrical.

May I first of all list the items required for the conversion. They are few and can be obtained from Maplin Electronics who can be found at P.O.Box 3, Rayleigh, Essex SS6 2BR. The items are:-

ITEM	ORDER No.	COST
Resistor 47 ohm	H47R (10WW/W47R)	48p
Switch SPDT Submin	FH00A(Sub-Min A)	80p
Post & Packing		100p

The resistor must be 10watt rating due to the high current flowing through it.

Installing the items is not difficult but you must have some experience of soldering electrical connections and a light iron is recommended.

First of all remove the drive door lever then remove the top casing, after undoing the 4 securing screws from underneath, you may also find it easier to handle the top cover by removing the two mains socket securing screws. Be very careful removing and reassembling the cover as the front of the top cover has a clip action fastening to the front cover.

Just behind the front cover you will see a metal cased box which is the power supply. Connected into the back of the box are two wires coloured red and black and these are both connected to a plug. Remove the plug and cut through the red wire at a suitable point, say, 2 inches from the plug. Now

connect thin, flexible, twin wire of about 15 inches in length to the two ends of the red wire, using insulating sleeving. Take the top cover and drill a small hole to take the switch, the best position being about 6.5 inches in from the side nearest the power socket cut-out and on the back face of the top cover but, before mounting the switch, you should complete the electrical connections.

Wire the resistor across the two outside connections on the switch and connect one of the twin wires(it does not matter which) to the centre connection and the other to one of the connections you have already used for mounting the resistor. Now mount the assembly using the hole you have drilled on the back of the top cover, re-insert the plug in the power supply casing and reassemble the top cover making sure that none of the wires or connections are bare or can come in contact with other wires or connections.

That's all there is to it. Now you have a switch on the machine which will give you a quieter fan speed and a faster speed for you to compensate for those days of intense heat, although to experience that you will probably have to take a long holiday abroad.

THE 64 EMULATOR 2 REVIEWED

by Harry Burrin

I have recently received a copy of the above utility after a long wait. I ordered it on 24 January and received it at the end of March. However, was it worth waiting for?

Well, first of all after loading the program you have to use the Configuration Editor. This can be brought up at any time by pressing <Ctrl> and <Help>. There are many options available in the Configuration Editor such as which disk drive you wish to allocate a drive number, from 8 to 11, to. So you can have a C64 drive or an Amiga drive or a hard drive or even the Ram. However, you do need at least 1 Meg of memory for the Ram option. Also in the Config. Editor is the means to change the Mouse/Joystick ports so that either port can read Joystick, Mouse or Light Pen. There is also an option to simulate a 1764 Ram expander. By setting this to 'on' 256K of the Amiga's memory will be set aside to be accessed as if a 1764 cartridge was connected. There is also an option to use an alternative character set which does give a clearer text than is available on the C64. Also available on the Editor is the option to use the monochrome mode. This is handy if working with text only as the program runs much quicker.

Provided with the 64 Emulator is a Serial Interface Cable. This is plugged in to, in my case, a 1541 disk drive and the other end is connected to the parallel port on the Amiga. This means, of course, if you want to use the printer then you need to swap cables. However, if there is a C64 serial printer available this can be daisy chained with the disk drive.

Once the configuration is done the booklet tells you to get a disk directory by typing 'load"\$",8'. Unfortunately the quotes is not shift/2 as it is on the C64. On the Amiga it is shift/@. Shift/2 turns out to be @. That, however, is the only confusing thing I found. [This will vary from machine to machine and country to country since the programmers are not correctly interpreting keycodes. - Ed]

If you try to access a disk drive that is not switched on then Emulator 2 hangs up and has to be re-booted. I managed to run Easyscript okay but the printout is all in upper case. I couldn't get it to print lower case at all.

All C64 BASIC commands are allowed plus Basic 4.0 if required. However, Basic 4 runs slower than Basic 2 and that is slow enough. This brings me to the restrictions of the Emulator. As mentioned Basic programs do run a lot slower than they do on a C64. However, I overcame this greatly by compiling

my basic program. I have the Stack Blitz Compiler which works very well.

There are 2 booklets supplied with Emulator 2 which cover Emulator 1 and 2. Both are well written and easy to understand. New to Emulator 2 is a program called Use64Printer which will redirect printer output to a C64 serial printer. This program can be put on your Workbench disk and the startup-sequence modified to run it. Also supplied in the Devs:Printers directory are some C64 printer drivers.

Also provided in Emulator 2 is enhanced transfer software that runs from Amiga mode rather than during 64 emulation. Once loaded the mouse is used to control the transfer of programs or files to df0: df1: etc.

Configuration Editor changes, from Emulator 1, include being able to read 1541 disks with an Amiga 1020 and 1581 disks with an Amiga 1010 drive.

A new freeze option allows you to save the 64 program that is currently running onto an Amiga disk for later use. This is handy if the game that you are saving is of the type that has a speed increase with each level. You do have to be patient, though, while running the earlier levels at slow speed.

CONCLUSIONS.

If you want to run word processors etc., or use your C64 printer with the Amiga, or run text adventure games then this is for you. If you want to run your C64 arcade games on the Amiga then forget it. The manual does admit that programs run slower but suggested that the games that allow you to change the speed of play be used. Unfortunately, I don't have many games that allow you to do that.

The Emulator 2 disk and cable cost me £49.00 and frankly I'm disappointed with it due to its limitations.

If anyone has any comments or found a way of running programs quicker when using 64 Emulator then let's hear about them in future issues of the Newsletter.

LEARNING FORTH BACKWARDS

by Richard G Hunt

CHAPTER 3 - Thanks for the Memory

The Forth dictionary consists of 200 odd words. So far we have looked at only a few of the arithmetical words. To cover every word at this rate will take volumes! The object rather is to initiate conversations between the user and the Forth system in his computer. So far these conversations have been somewhat limited. In this chapter we shall take number 'conversations' a little further by examining memory, and start defining our own words to manipulate the Forth environment.

The 6502 (and family) processor has the curious habit of presenting any two byte address in low byte/high byte order. The hexadecimal address 1001 is held in the computer's memory as two bytes: 01 10. This is why in BASIC you might examine the pointers to start of memory to find out the address by issuing the command:

```
PRINT PEEK(43) + 256 * PEEK(44) <return>
```

The high order address has to be converted to a decimal number in the same scale as the low order byte. That is the purpose of the 256 times part. The actual calculation is (in decimal) $1 + 256 * 16 (=4097)$. In Forth of course that would be written

```
1 256 16 * + . <return> 4097 OK
```

Suppose we wanted a Forth word to perform the correct operation on any 2-byte address, so that we could look at memory. The word C@ (pronounced C-fetch) has the stack notation (addr -- b), which indicates that it returns an 8-bit or single byte value from an address supplied on the stack. Thus entering

```
43 c@ 44 c@ <return>
```

would place the two bytes on the stack. We could then perform the arithmetic indicated above and we would obtain a value. (Obviously the value is going to be nonsense. Forth doesn't use BASIC pointers!) We might even define a new word to do the job -

```
: LOWHI C@ 256 * SWAP C@ + ;
```

The calculation is performed in this order because the high order address is at TOS. SWAP is used to bring the low order address at 2OS to top. When using Forth it is very important to keep track of what goes on (and off!) on the stack. If LOWHI were executed, the stack would look like this:

- 1) addr1 addr2 (two address parameters)
- 2) addr1 b1 (byte contents fetched by C@ and addr2 consumed)
- 3) addr1 b1 256
- 4) addr1 prod (product of b1 * 256)
- 5) prod addr1 (SWAP reverses top 2 items)
- 6) prod b2 (byte contents fetched by C@ and addr1 consumed)
- 7) addr3 (sum of product and b2)
- 8) (stack cleared by output)

As we are dealing with an address in the range 0 to 65535, there may be a problem when the address is greater than 32767 unless the reader is familiar with two's complement numbering. The word . outputs signed integers. Here it is preferable to use U. (u1 --) which outputs unsigned integers in the range 0 to 65535. LOWHI may be redefined accordingly, or better still get rid of it altogether by using the command:

```
FORGET LOWHI
```

Forth provides the word @ (pronounced fetch) which places the contents of a two byte address on the stack, in the same way as c@ places the byte contents. (So LOWHI was really redundant from the start, especially as @ is defined in machine code for speed!) Not all two byte pairs are addresses, and so @ is not always appropriate. Both these words are going to be useful, though, when we want to look at a memory dump late on. We have the concept that we want to display a series of addresses and their contents. How should we go about doing this in Forth?

The first step is to define, using English, what the objective is - the end result. Without knowing where we are going to, it is difficult to start from the right place! We can then define some of the steps and intermediate destinations. Finally we might try to write some code and test it. On the way some new techniques and Forth words are bound to be included, so we must ascertain what are the tools with which we shall build.

The objective, then, is given an address and a quantity of bytes, to display -

in hexadecimal (it is neater!) that address followed by the contents of that address and the next seven addresses on the same line. We wish also to display their ASCII equivalent, but not if that causes the screen to 'go bananas' as a result of control characters! Then we will do the same on a new line until we have displayed all contents up to the quantity given, rounded up to the nearest 8, again for appearances.

It seems quite difficult when stated like that, but with just a few more words we can manage a simple version of it.

The main word will be called DUMP, and its stack notation is (addr count -). It will display an address and 8 bytes of data. It will display 8 ASCII equivalents. It will continue to do so - loop - until it has reached the upper limit expressed by the count.

A simple definition might look like-

```
: DUMP ( ADDR COUNT ---)
  HEX ( SET BASE 16)
  FIND-END-ADDR
  PRINT-ADDR
  DO 8PEEK 8ASCII
  LOOP
  DECIMAL ( RESET BASE 10)
```

It is clear that most of these words are not Forth. That they could be Forth is one of the advantages of Forth. They are used here though to indicate that some processing must be done. If we break the task into smaller pieces, we note that the actual work is done by 8PEEKs and 8ASCII. FIND-END-ADDR is a possible candidate for definition but, having prepared the traditional Blue Peter finished definition in advance (it's in the oven...), it is safe to say that it will be defined in terms of existing Forth words within DUMP. The definition of a word to 'peek' an address will bear a small resemblance to LOWHI -

```
: PEEK ( addr ---) C@ . ;
```

PEEK may be tested interactively by giving it an address to process. A value in the range 0-255 will be displayed. All new definitions should be tested in this manner before being called by a later definition, so that errors may be eliminated at an early stage. It is also much easier to do it like this! The next step is to make PEEK do it eight times in succession. For this, the control structure DO LOOP is required. DO LOOP enables repetitive processing within two parameters

supplied to DO. The first is a limit to the loop, and the second is the index. Words placed between DO and LOOP will execute (limit - index) times. Consider the definition -

```
: TEST 10 0 DO 2 3 + . LOOP ;
```

Executing TEST will output -

```
5 5 5 5 5 5 5 5 5 5 OK
```

The index can be used within the loop to count -

```
: TEST2 10 0 DO I . LOOP ;
```

Executing TEST2 outputs

```
1 2 3 4 5 6 7 8 9 10 OK
```

The index word I fetches to the TOS the current value of the loop index. Furthermore the index can be used to increment the address that we wish to PEEK. We may now build a better PEEK -

```
: PEEK ( ADDR1 ADDR2 ---)
  DO I C@ . LOOP ;
```

To test PEEK now, two addresses must be given, the higher first, so -

```
4106 4096 PEEK <return>
```

There is just one final thing we need to do to PEEK to make it acceptable. The address contents will consist of one or two hex digits. Ideally we should format the output so that where only one digit is displayed it lines up with corresponding digits. The word .R (n1 n2 -) takes n1 and displays it right aligned in a field n2 characters wide. We redefine PEEK therefore as -

```
: PEEK ( ADDR1 ADDR2 ---)
  DO I C@ 3 .R LOOP ;
```

so that there is at least one space between each output.

ASCII is defined similarly, but instead of displaying a number, a character

must be output. The word EMIT (n1 →) is used to convert a value on the stack to its ASCII equivalent. Entering

```
65 EMIT <return>
```

outputs

```
AOK
```

Note that there is no space after the letter A. ASCII might start out as -

```
: ASCII ( ADDR1 ADDR2 ---)
```

```
DO I C@ EMIT LOOP ; ;
```

However with values less than 32 and between 128 and 159, weird things will happen as control characters are sent to the screen. For example, 147 EMIT clears the screen, which is not quite right on this occasion! Therefore we must build in two checks for these control characters. To do this, conditional testing is required. As that is a subject which will be discussed in more detail in a later chapter, the completed definition of ASCII is given below. It performs the required task, but understanding it also should perhaps be left to later.

```
HEX ( SET NUMBER BASE)
```

```
: ASCII ( ADDR1 ADDR2 ---)
```

```
DO I C@ ( FETCH CONTENTS OF BYTE INDEXED)
```

```
DUP DUP ( MAKE TWO COPIES OF IT)
```

```
20 < ( IS IT < 20 ?)
```

```
SWAP DUP 7F > SWAP A0 < AND
```

```
( TEST IF IN RANGE 80-A0 & AND RESULTS)
```

```
IF ( YES IT IS A CONTROL CHARACTER)
```

```
DROP 2E THEN ( REPLACE IT WITH A DOT)
```

```
EMIT LOOP ( AND DISPLAY IT)
```

With the main components ready and tested in isolation, they may be built into the high level calling word DUMP. First, however DUMP must be expanded so as to cover all requirements. The display must be in hex, but any other number base should be saved and restored at the end. A short routine does nicely -

BASE @ >R HEX

The number base is stored in the user variable BASE. >R (pronounced To-R) places the value fetched to the stack by @ on the return stack (about which more later), which for convenience may be used as a temporary store. To restore the base at the end we need add only -

```
R> BASE !
```

The word ! (pronounced store) stores the value removed from the return stack by R> (R-from) back in BASE. It is of course the counterpart to @.

If DUMP is to look for two parameters on the stack, an address and count, it is necessary to manipulate those so that loop parameters are correctly passed to PEEK and ASCII. Additionally, the address of the current display line should be displayed at the beginning of the line. That task comes first-

```
OVER + SWAP
```

The address at 20S is duplicated and added to the count, and their order swapped, thereby producing a pair of outer loop parameters to drive DUMP. Once inside the loop, its index I is used to provide loop parameters for PEEK and ASCII. The loop terminates with the phrase -

```
8 +LOOP
```

which is a variant of LOOP that acts like the BASIC STEP in a FOR NEXT loop. The index is incremented by 8 so that the next line will continue correctly. Examine the complete definition.

```
: DUMP ( ADDR COUNT ---)
```

```
BASE @ >R HEX
```

```
OVER + SWAP CR
```

```
DO I DUP 1 U* ( TAKE START ADDR AND TURN INTO D.NUMBER)
```

```
4 D.R ( DISPLAY IT IN FIELD 4 WIDE)
```

```
DUP 8 + SWAP ( COPY INDEX AGAIN, ADD 8 & SWAP)
```

```
OVER OVER ( MAKE COPIES OF BOTH PARAMETERS)
```

```
PEEK SPACE ASCII CR
```

```
?TERMINAL IF LEAVE THEN ( TEST FOR STOP KEY )
```

```
( AND EXIT IF PRESSED)
```

```
8 +LOOP ( END LOOP)
```


R> BASE ! ;

D.R is similar to .R, but works on double numbers. CR sends a carriage return to the screen. ?TERMINAL tests the stop key returning a flag for conditional testing. LEAVE is the only permitted way of terminating a DO LOOP without completing it. It increments the index to the limit causing the loop to end at LOOP or +LOOP.

The way DUMP has been built up permits each component and each phrase to be tested for its action. Obviously care must be taken with the stack, and that is the subject of Chapter 4.

STOP PRESS REVIEW

by Derek McMillan

"Stop Press" is the current name of what used to be called "Pagemaker" and is produced by AMX. It is just the best desk-top publishing system for the C64 that I have seen.

It can be operated with a mouse or joystick (if you use a joystick, the function keys take on the role of the three keys on the mouse). I have used the Newsroom up to now but it has the following advantages:

- You can expand or contract images on the screen.
- You can import files from Superscript.
- There are far more fonts and you can design your own.
- In effect you can work on two panels at once.
- Most of the graphic tools are memory resident - no more waiting for the 1541 to cough up its secrets!
- You can design your own patterns.
- There is no distinction between photos and clip art so you can import clip art pictures directly into your own artwork.
- You can use more than one disk drive.
- The program is incompatible with Quickdisk and there may be other incompatibilities I wot not of. I overcame this by resaving the program using Expert Trilogic. It now loads in 25 seconds.

Like most DTP programs I have seen, the Clip Art provided is a bit pathetic. Surely there are some gifted ICPUG members out there who can produce better work than this.

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WHO'S WHO?

JOHN BICKERSTAFF - CHAIRMAN

Born in Haslemere, Surrey, in the 1920's, and christened Francis John, by his fond parents, baby John was destined by the fates to become not only Chairman of ICPUG South East Group, but also the Chairman of ICPUG National. At the Annual General Meeting held on 6th May, he completed his first year in this onerous office. (A little way to go to catch up with a certain Mrs. T, but the post is not dissimilar!)

John went to school in Godalming until, with the outbreak of war, he was evacuated to Exeter, where he attended Hele's School. His ability for administration showed itself at an early age, and he took over the management of the ration books, apportioned the tea and butter and measured out the rations for himself and the other four boys staying with 'Auntie Polly'.

A career was mapped out in Electrical Engineering, and John became an apprentice at Metropolitan Vickers at Trafford Park in Manchester. He applied himself diligently to his trade, and after years of hard work became a Member of the Institution of Electrical Engineers and a Chartered Engineer. For many years he worked for A.E.I., until its take-over by G.E.C. in the 1960s.

John has always been interested in music and ballroom dancing, once gaining a gold medal. Maybe this helps him to be in the swing of things and keep on his toes as Chairman of ICPUG!

Crossword addicts beware! It was whilst doing the Daily Telegraph crossword when commuting from Whitstable to London, that John met another crossword fiend, Janet. For a while they both worked in Canterbury, and a new interest followed that of electronic organs, computers came on the scene! In no time the Canterbury branch of ICPUG was formed, and he was hooked.

The PETS grew in complexity, and following a move to Croydon in 1982, John joined the Biggin Hill Group, where he has been Chairman since 1985.

Following his appointment to the National Committee as Discounts Officer in 1982, he became Vice-Chairman to both Mike Todd and Jim Kennedy in their respective terms of office, doing much of the work behind the scenes to ensure the smooth running of the committee and the group. Thus when Jim Kennedy retired in 1988 John was the obvious choice to replace him.

Now he is busier than ever. Having become self-employed, there is now a tight schedule of work appointments to keep. This together with the work of the group to be dealt with means he is very often working until one or two in the morning, John always has time to help the many people who ring every evening, either looking for discount advice or solutions to technical problems.

A CONVERSION EXERCISE IN BASIC

by Harry Burrin

I joined ICPUG late last year shortly after visiting the computer exhibition at Earls Court. It wasn't long after that that I decided to take the plunge and upgrade to an Amiga 500. I'd had a C64 for a number of years but having seen what an Amiga could do and, being recently discharged from the Merchant Navy on medical grounds, decided the time was right.

I'd had the Amiga about 2 months before I got round to having a look at AmigaBasic. Seeing that it was vastly more complex than the C64 basic I decided that a good way to get started would be to convert a program I wrote about 18 months ago for the C64 to AmigaBasic.

First of all, of course, I had to find a way of getting my program transferred from a 1541 disk to a 3.5" disk. Fortunately the latest, January/February, Newsletter provided the answer because Brian Fowler offers that service to members. Off went my disk with the program and it's associated sequential files plus a 3.5" disk and within a few days I started the conversion. Many thanks to Brian for his prompt service and his help initially in getting me started.

The program I had written for the C64 was one that I had called 'Pools Nos.Frequency'. This idea was born after my wife one Saturday afternoon said that No.8 on the coupon was a score draw again. Firstly, I wrote the program so that each week all the score draws could be entered and then displayed in a table and stored as a sequential file. After I had got that part working okay I then changed it so that no-score draws, aways and homes could also be entered and stored either on disk or tape. When, after a number of weeks, it became a bit tedious to go through the tables to see which were the top numbers that had been either score draws or no-score draws etc. I then introduced a sort routine that displayed the top 18 when requested.

That then was the program I wanted to convert so that it ran on the Amiga and at the same time find out what the differences were in the Basics.

The very first thing I discovered was that AmigaBasic doesn't like reserved words joined up with others or with variables e.g. Forx=1to10. As all my programming on the C64 was done that way it took most of one evening to ensure that there were spaces each side of reserved words. Having got that out of the way it was then necessary to remove all the code that was used to change the colours of the text and the screen. AmigaBasic uses COLOR and PALETTE instead of POKES. I then had to introduce the command LOCATE to move the cursor around the screen so that the text looked decent. In fact this

was easier to use than the 'cursor rights' and 'cursor downs' etc. that had been required for the C64 version. TAB was okay though so that stayed. CLS to clear the screen is also easier to use than the old print'clear/home'. The way data is transferred to and from disk is a bit different as well. I ended up using OPEN "o",#1,"df1:scoredraws (or homes etc)" instead of OPEN 1,8,2,"@0:freq."+xx\$+"S,W". The "o" is changed to "i" to load the data back into the program. The code referring to tape was removed, of course. One of the other differences between the two basics is that AmigaBasic doesn't require line numbers. However, I decided to leave them in for this conversion exercise mainly because it was easier to do so than not.

After all the above was done the program worked okay until the sort routine was called. The routine was called with a GOTO 4030 and after the sort the top 18 were printed to the screen. This is the sort:-

```

3810 nt=2:mx=58
3830 nt=2*nt
3850 IF nt<mx/2 THEN 3830
3870 FOR j1 = 1 TO mx-nt
3890 FOR j2 = J1 TO 1 STEP-nt
3910 IF n(j2)<n(j2+nt) THEN 3990
3930 NEXT j1:nt=INT(nt/2)
3950 IF nt>0 THEN 3870
3970 RETURN
3990 t=n(j2):n(j2)=n(j2+nt):n(j2+nt)=t
4010 NEXT j2:GOTO 3930
4030 REM sorting
4050 PRINT "sorting - please wait"
4070 FOR l=1 TO 58
4090 n(l)=a(l):c(l)=a(l)
4110 NEXT l
4130 GOSUB 3810

```

The program would stop and the line 3870 would be highlighted with the error message displayed 'NEXT WITHOUT FOR'. As it was a FOR statement that it didn't like why did it say 'NEXT WITHOUT FOR?'. I would be very interested if someone could explain that. Anyway I sent the new version of the program back to Brian Fowler to see if he could sort the sort if you see what I mean. However, he didn't but he did send me a different sort routine which, once adapted for my program, worked okay.

So after working on the conversion for about a week all told (yes, I know

I'm slow but I came to computing rather late in life and the grey matter isn't what it used to be) it now works smashing. The exercise was interesting and it helped in pointing out the differences in the two basics. However, in no way am I now an expert on AmigaBasic but have still plenty to learn. The program is very simple and only uses a few of the many reserved words that Amiga Basic has.

If anyone is interested in having the program either on tape or 1541 disk or 3.5" disk then please send your disk or tape to me with return postage and it will be done.

My address is:-

16, Carlton Avenue
Gillingham
Kent
ME7 2JU.

PLUS/4 TIPS: Script/plus

■ If you find that script/plus "help" screens are not enough, then build up your own or use those on the "RAM LISTINGS & SCRIPT/PLUS" disk, from the ICPUg library. These can be saved as "help" and called up without interfering with work on screen by using Esc (escape) j <return> to switch memory banks and loading "help" and then resuming your work with Esc j again. Yes, it's still there! Printer codes can be used in this way, too instead of having to look them up.

■ Ever envied Superscript owners the ability to have standard phrases and letter endings etc. at the touch of a couple of keys or so? Well so can you. Save a file 'a' containing "In (a)nticipation of your early reply etc. etc.*In4< A.N. Other"<

* being control 9 and < being return. By using function key 2 (load file) and 'a'< (return) the ending with four blank lines, then your name, are before you at the press of three keys. Envy no more! The cost is one or two blocks on the disk, it's worth it.

CHANGING DRIVE NOS. WITHIN APPLICATIONS

by Joe Griffin

As Chris Wright mentioned in a previous newsletter, I was involved with him in the beta testing of Superbase V3.0. This was the first version with support for the 1581 3.5 inch disk drive and my test version came on 3.5 inch media.

As Chris has reported, testing of Superbase went well; in fact the only problems we found were with the 128 version of the utility program, which I managed to crash with monotonous regularity. A copy of my 8250 database was given to Tom Cranstoun for checking and the problems were fixed, leaving a good product.

This left me with a little problem though. I have Superscript and Superbase V2 on 5.25" disk and Superbase V3.0 on 3.5" disk. Version 2 of Superbase does not support the 1581, and because of the bug in the 1571 ROM, I can't run Superbase on the 1571. (Don't tell me to get a 'Fix-it' ROM, I'm not talking about the old bug, I'm talking about the NEW one. - See my article in the March/April Newsletter.) For my major applications I want to run Superscript and Superbase in the machine at the same time (just like Super-Office on the 8096). To do this you need to load Superscript first. I've got a 128D, so having booted Superscript, I can't switch the drive off and turn the 1581 on. Neither will Superscript allow you to load Superbase from device 9 (the usual setting of my 1581).

A short time ago two American Magazines arrived and while reading them I saw how to overcome the problem. I gratefully acknowledge the inspiration given by them. Firstly 'Twin Cities 128' Issue 22 carries an article by Miklos Garamszeghy on changing the vectors inside the 1581 (to prevent auto initialisation by programs such as PaperClip). He states that most commercial wordprocessing packages allow DOS wedge commands to be passed to the drive, to allow things like disk validation. A utility loader (ampersand) file can be activated in this way. Miklos used this to alter the 1581 reset vector.

The second magazine was the 'CBUG Escape' Issue 10. In that issue, an article by Anthony Goceliak described a method of setting IEEE bus device numbers, using ampersand files.

For those who do not know about them, ampersand files are machine code programs which load into and execute within the disk drive RAM. They will not operate on some of the early IEEE drives such as the 3040 and 4040, but will work with the 8x50 and serial drives.

The rules for ampersand files are fairly simple:

- On earlier drives (8050, 8250, 2031, 1541) the file name must start with an ampersand (&). On the 1571 and 1581, this is not required.
- The file must be a USR type file.
- The first two bytes of the file specify the address in DISK RAM to which the code will be loaded.
- The third byte of the file is the number of bytes of CODE to come.
- After the code, and not included in the count above, there must be a single byte checksum. This is the sum of all the bytes before it, including buffer address and number of bytes. If the value of the sum is greater than 255, 255 is subtracted and the check repeated.

After a few moments thought, I realised that by putting the two ideas together, I could solve my problem. It would be possible to create auto-execute files which set the device number of the 1571, as for the IEEE drives. By using the DOS wedge technique, these could be activated AFTER Superscript had been loaded.

Now, to run both Superscript and Superbase at once, I first set the 1581 as device 8, but do not power it up. Superscript is then booted on the 1571 in the 'D'. Once defaults have been loaded, I place a disk containing the ampersand file called 'set device 09' in the 1571 and execute the command <F1> <D>ocument <U>tility <O>ther; then on the command line I type in 'set device 09' and press return. The ampersand file is loaded into disk ram and resets the 1571 as device 9. At this point the screen fills with garbage and needs to be restored by pressing <RUN/STOP><RESTORE>. I can then turn the 1581 on and with <F1> <D>ocument <U>tility <S>uperbase, boot Superbase V3.0 from the 3.5 inch drive. If I want to use the 8250, which is set as device 9, then by using a different file I can set the 1571 as device 10 - unreachable from Superscript, but accessible from Superbase.

Some people collect programs; I collect disk drives! On my system at home, my 128-D (with built-in 1571) has a 1581 on the serial bus and provision (via a BrainBox IEEE interface) to connect to 4040, 2031 and 8250 parallel IEEE drives. In order to have as much flexibility as possible, I wrote a BASIC program to create ampersand files for all these disk drives. That program reads the drive ROM, to determine the drive type, then sets parameters accordingly. Here I present a cut down version of the program, which requires you to specify the drive type and modify the code accordingly. If anyone would like a

copy of the full version, then please send me a formatted disk and return post.

```

100 rem dsave @"make & devices":? ds$
110 rem
120 rem autoboot file maker
130 rem by joe griffin (icpug)
140 rem
150 print "Make Automatic Device Setter Files"
160 print
170 un=8:rem device wanted
180 sd= 8:rem starting device number
190 ed=12:rem ending device number
200 for dv=sd to ed
210 fi$="set device "+right$("00"+mid$(str$(dv),2),2)
220 rem note if device is not a 1571 or a 1581 then fi$=&+fi$
230 print "Filename = ";chr$(34);fi$;chr$(34);
240 open 1,un,3,("@0:"+fi$+",u,w")
250 restore:cs=0
260 read bb,mm:rem drive specific items
270 read mc:cs=cs+mc:print#1,chr$(mc);
280 cs=cs+bb:print#1,chr$(bb);
290 for i=1 to 2:read mc:cs=cs+mc:print#1,chr$(mc);:next i
300 cs=cs+dv:print#1,chr$(dv);
310 for i=1 to 4:read mc:cs=cs+mc:print#1,chr$(mc);:next i
320 cs=cs+mm:print#1,chr$(mm);
330 for i=1 to 3:read mc:cs=cs+mc:print#1,chr$(mc);:next i
340 cs=cs+mm+1:print#1,chr$(mm+1);
350 read mc:cs=cs+mc:print#1,chr$(mc);
360 if cs>255 then cs=cs-255:goto 360
370 print "Checksum =";cs
380 print#1,chr$(cs);:close 1
390 next dv
400 end
410 data 4,119:rem disk drive buffer and location of device bytes
415 rem change these as required
420 :
430 data 0,12,169,24,105,32,133,105,32,133,96
431 :
432 rem 0, (bb) buffer address lo,hi
433 rem 12 no of bytes of code to follow

```

```

434 rem 169,(dv) lda #dv
435 rem 24 clc
436 rem 105,32 adc #32
437 rem 133,(mm) sta mm ; read device number
438 rem 105,32 adc #32
439 rem 133,(mm+1) sta mm+1 ; write device number
440 rem 96 rts
445 :
450 rem 2031,1541,1571,1581 bb = 4 mm = 119
460 rem 8050,8250 bb = 18 mm = 12
470 rem 1551 bb = 4 mm = 12
480 rem 4040 dos 2.7 only bb = 18 mm = 12

```

PLUS/4 TIPS.

If you are reading this, you may have noticed other tips for the plus/4. You may say to yourself what a waste of space, why don't they print some like those I use?. BECAUSE YOU DIDN'T SEND YOUR'S IN, THATS WHY NOT! So send your's in now. They all help people like me who are not very experienced.

David Sissons.

READERS WRITE...

Editor's note: Letters for publication should be sent to Brian Fowler (address inside front cover) to arrive no later than the last Saturday of the month before the first month on the cover of the relevant issue. If you followed all that, it's one week BEFORE the editorial copy date. Please supply your letter on disk with an accompanying printout, since this makes our lives very much easier.

Here's a letter from Mr P Charlesworth, about the Multisoft Assembler (Note: sorry - sold out) reviewed in the January issue. It was originally addressed to John Bickerstaff, Discounts Officer and Chairman. Mr Charlesworth writes from 112 Glover Rd, Scunthorpe, South Humberside, DN17 1AS

I wonder if I could spare a moment of your time. I thank you for the prompt delivery of the Multisoft assembler for C64 - I have read through the manual and understand the Monitor and Dos commands, but am at a loss on how to activate the assembler.

I tried a simple program

```
1C00 LDA #$02
```

```
1C02 STA $D020
```

```
1C05 RTS
```

which should colour the border to Red when activated from start address \$1C00. All I wish to know is how to start - how to indicate the ORG address - what spaces to leave for Address, Label, OpCode, Operand.

Does ASM activate the assembler to make a program - how ?

John Bickerstaff passed the letter to Joe Griffin, who wrote the review. Here is Joe's reply.

Before you can assemble a program, you must first write it. As the manual describes in Section 6, source files are not tokenised, so you must use the EDIT command before starting to write your code. Therefore, type 'EDIT' and press return.

In order to save work, it is best to set auto line numbering, so type 'AUTO 10' and again press return.

By convention source code files start from 1000, also the package has the 'DO' command, which executes the first line of the source (page 28). Therefore it is good practice to put the storing command in the first line, thus:

```
1000 ; put "@0:demo"
```

Now, when you type 'DO', the source code will be saved to disk.

Usually, you would then put a brief description of the program in comment lines, so that they are at the start of the file. At the moment, we have not defined where the program is to reside, so we put in a line of the type:

```
* = $c000 ; tuck code into free space
```

The practice I adopt (there are others) is to now define working variables and give sensible names to memory locations, as it will be a lot easier to see what the program is doing, if these are used. For example few of us will carry the location \$D020 in our heads, but if we give it the name 'BORDER', then it is much easier to remember that it is the location for the screen border colour.

We can then go on to code our routine as required. To use a simple example:

```
1000 ; put "@0:demo"
```

```
1010 ;
```

```
1020 ; simple demo to cycle border colour
```

```
1030 ;
```

```
1040 * = $c000
```

```
1050 ;
```

```
1060 border = $d020 ; screen border colour
```

```
1070 getin = $ffe4 ; read key buffer
```

```
1080 ;
```

```
1090 lda #$0f ; starting colour
```

```
1100 sta colour ; store it in workspace
```

```
1110 ;
```

```
1120 loop lda colour ; get next colour
```

```
1130 sta border ; set border colour
```

```
1140 ;
```

```
1150 readit jsr getin ; read keypress
```

```
1160 beq readit ; no key pressed, wait
```

```
1170 ;
```

```
1180 dec colour ; reduce colour value
```

```
1190 bne loop ; if still valid, repeat
```

```
1200 ;
```

```
1210 rts ; return to basic
```

```
1220 ;
```

```
1230 colour *=+1 ; define workspace
```

```
1240 ;
```

```
1250 .end
```


READERS WRITE...

In this example I have spaced out the listing, much as it would be done on the Plus-4 or C-128, when the 'EXPAND' option is being used. The extra spaces are not needed, but make for better readability.

We can now issue the 'DO' command to save this onto disk and then try to assemble it. Once again, I tend to assemble without creating an output file, until I have got rid of most of the errors.

To initiate the assembly process, we merely type 'ASM' and press return. There is an alternative method, using a SYS command, which is described on Page 34 of the manual.

The assembler prints a copyright notice, then asks for the filename and options. If the file is small and is currently in memory, we can assemble from memory using the CORE option (see page 33). So for our first run, we would probably type:

DEMO.C <return> - Ignoring all other options for the moment.

Once we have got the major bugs out of the program (spelling errors etc.) we can create a program file and list the assembly to the printer, so we would now type something like:

DEMO.M,P,C <return> - asking for a module file and printer output

For more details of the options available I would refer you to section 7 of the manual. We can now load the module, using '8,1' to avoid relocation and run it with SYS 49152. The screen border will turn Light Grey, then each time a key is pressed, it will change, ending when it becomes white.

Mr. KJR MacLennan of Balchruggan, 2 Craigrory, North Kessock, Inverness. IV1 1XH provides a follow up to a previous letter.

You were kind enough to print my letter on problems I was having with the LC-10C printer when using the C64 version of Superscript and Superbase. Readers might find it useful to know that the SB problem appears to have been solved by using the printer in ASCII mode rather than CBM mode and using the EPSON printer definition available in SB. Also the use of ASCII has certain advantages even with Superscript.

Neither Precision nor Star could offer a solution to the SB problem, even after months of enquiry. It was thanks to Tony Wright of 3, Algarth Rise, Stockton Lane, York YO3 0HD that this simple solution came to light through the courtesy of ICPUG.

Pete Stewart writes from 14 Garth Close, BORDON, HANTS, GU35 0HX in reply to a previous letter...

In response to Gary Haslam's letter on the apparent margins of UK computer dealers I would like to add the following points.

Not only is it the cost of software, and add on hardware, but the cost of the machines themselves. Whilst I was stationed in Germany Commodore released the 128D. Whilst I cannot remember the prices at the time there was a considerable saving. The same applied to my current machine, Amiga 500. This I bought in October, 1987 for DM 665 from a local hypermarket in Paderborn. This amounted to a saving in excess of £175. Why? The only answer I can possibly think of is that the dealers have only one interest in life -- PROFIT.

I can accept that to import the odd machine now and again could result in some fairly heavy import duties, but as Commodore themselves import the machines from Germany in bulk the cost is dramatically reduced. The mark up is made by the dealers.

By far the best way for people to save money is to nurture contacts overseas who can obtain most products at greatly reduced prices, or subscribe to foreign magazines and order direct. Whilst there may well be a certain amount of duty to pay on receipt, it rarely brings the price up to that charged in this country.

Indeed it is often prudent to drop a line to HM Customs enquiring as to what they are likely to charge on any product you may be interested in prior to ordering, just to make sure.

If people were to start doing this on a large enough scale then there would be a significant drop in sales. This might prompt the Importers and distributors to rethink their policies on pricing which can only benefit the end user, US.

It would be most interesting to hear a truthful answer from the Importers/distributors, with a breakdown of costs and also on how they set their prices.

Jeremy Joel writes from Calle Son, Gargori No 4, Capdepera, Mallorca, concerning the Newsletter.

I was interested in your article on members with impaired vision, in so much as you put forward the suggestion that it might be a good idea to put the Newsletter onto disk. Wouldn't this be a good idea for everyone? I realise that disks are £1 each, or a bit less, but then there must be a great saving on printing expenses. The advantage to us would be that we can index Newsletters much more easily, ending up at the end of a few years with a tailor-made reference of articles.

I am a member of 17-bit, who put out a disk-based Newsletter and it really is very fine. They are able to give demos of graphics and sound, and one is able to print out the material of particular interest.

I am most interested in articles on hard disk [I hope you don't mean we supply the Newsletter on hard disk? - Ed] as I have just bought a Starboard SCSI and Seagate ST157N whilst in the U.S. I am still getting the thing together, requiring a power pack and cable. Once it is working, I would be happy to write an article about it, if you would be interested.

I live in Mallorca, where we run our house as a small Guest House. If any members are in Mallorca, I would be delighted for them to drop in, whether for a chat or a stay.

The Editor replies... Thank you for your most kind offer to our members. We should also be delighted to see your article on hard drives. There are a number of problems with producing a disk-based magazine. Firstly we cater for all Commodore computers, the Amiga still being owned by a minority of members. This means we would need to produce disks in the following formats: 4040, 8050, 1581, DOS360K, DOS720K, AmigaDOS, and cassette tape. Yes, not all members own disk drives. This is clearly impractical and very expensive in manpower and time.

Cpl K A Lee writes from 14 Oak Ave, RAF Marham, Kings Lynn, Norfolk PE33 9LL, to say that he would be interested in hearing from any Amiga A500 users in his area willing to swap hints and tips etc. Cpl Lee would also like to know how to make some of his PD disks run without having to use the Workbench. He says - "I'm sure there's a routine which will do this, but being a recent Amiga owner and (at present) non-programmer I really wouldn't know where to start."

James F. Fowkes, of 8 Boytons, Basildon, Essex. SS15 5HS, writes with this plea for help with a Brother printer.

I am a relative newcomer to ICPUG, but have been 'computing' on a C64 for some six years or more now. I took my 'initial training' on a PET at King's College in the Strand where I was a teaching technician in the Wheatstone Labs. [a suitable 'bridge' into computing?? - Letters Ed] - until I retired a couple of years ago.

In order to 'learn all about it' I built a machine-controller on the lines of the Jan 1981 Wireless World's 'Nanocomp' - but on veroboard. Later I made the Eprom programmer (Jan'82 WW) to accompany it. Then followed up with a TV interface using Motorola's 6847 chip and a couple of 2114s, a Waterloo modulator, and a cassette interface using a 6850 UART.

My troubles began when my long-suffering spouse got fed up with it all and bought me a C64. A little later I got the 1541/803 package, and in that New Year I got the last copy of the old edition of Paperclip (for a tennor!) in a sale in W. H. Smith's in Kingsway.

Last year I bought a Brother HR10C daisywheel and 'enjoyed' myself making a printer file. That's what brings me to write to you. As you can see from this letter, everything works - but I cannot get the 'semi-proportional spacing mode' to work; i.e. to make all spaces on a line equal instead of using a full space.

I've tried writing to Paperclip, with no response. I tried Commodore, also with a null reply. I have three copies of the Brother manual (each in a different language) - and no proportional

justification...

I wonder if any other member has had the same problem, or has discovered it can't be done?

Sorry if I have rambled on a bit, it's been nice talking to you. I hope I haven't wasted your time. This is the first time I've joined, let alone written to, a user group. I would be happy to hear from other readers in a similar age group, and with similar interests - no programming!

A cry for help from Down Under - Paul Blair writes from 13 Calder Crescent, Holder, ACT 2611, Australia...

The story began when Commodore Oz decided to clean house. They had a shelf full of MPP1361 (=8023) printers, so they jobbed them out cheaply. Being a wide carriage printer, and as there are still PETs working here as well as C64/128 machines with IEEE interfaces, they sold quickly.

Most software worked OK, especially when used with one of Eamonn's Brain Boxes or a Leading Edge interface. Superbase, Superscript, etc. etc. - until it came to Dave Middleton's excellent spreadsheet, Micro-Swift. Despite all attempts, nothing could be wrung out of the printer. Diskdoc is the same, but that's easily fixable.

Let me set the scene. To boot in M-S to a C128D with a Brain Box attached, it is necessary to get into CP/M mode by holding down the CONTROL key. If not, then something somewhere louses up. Using the CP/M trick the front screen comes up, then the main page after tapping a key. So far, so good.

Now one starts to notice small differences from when one is operating without the interface. In NIM (non-interface mode), entering '1' at the keyboard will put '1.00' in a cell as per the default format. In IM (interface mode) the '1' remains a '1'.

Other things also become evident. Typing any cell in IM to a range requires deft combinations of CRSR and DEL keys to get a sensible input, whereas NIM is quite easy to use.

Try some printer output. Do the usual things, type in the cell range, and be told 'Unsure of meaning' or (worse still) total inaction. By this time, the computer has locked itself up totally.

Maybe someone out there in ICPUG-land has tried this and worked out the problem, or maybe the hardware is just too ancient for anyone to remember. The interface seems to me to be the least likely area, because (as I say) other things work, and I can drive the printer with Basic or MC without undue concern. I looked through the M-S code (V2, Aug85), just in case there was a jump to \$FF8A (which restores things and cuts off the Brain Box), but found none. There may be something I've overlooked, so I plead for any light that some erudite member may be able to cast.

P.S. The ROM is part 325320-02. There may be a later version - does anyone know?

Following on from David Annal's Datel DAU review last time, member A. Miller from 8 Middlemist Grove, Great Barr, Birmingham, B43 5EJ writes...

I write to complain about the poor service that one of your advertisers, Datel Electronics offers. I feel that it is of interest and importance to all who wish to purchase by mail order, and proves that the most interesting advert does not necessarily mean the best product or service.

On 26th February I ordered by phone their twin Amiga external drive. I waited a week to allow for mailing, but it did not arrive. I phoned Datel and was told that they had been waiting for cases and my drive was being dispatched. At that point I ordered an unpopulated RAM expansion board.

The next Friday I phoned again, as I still had not received the drive. I was told it was definitely being dispatched that day and I should receive it by Monday. I phoned again the following Wednesday. I was told that single drives were now in stock, but Datel were still awaiting delivery of the twin drives. The other girl must have been mistaken. The manager was not in, so I left a message that he should call the following day. I also stated my dissatisfaction with the company. I received no call by Thursday afternoon, so I called them again. The manager was apparently in a meeting. He did not return the call.

Several friends have had similar experiences and only got their goods by continually telephoning the firm. The RAM board eventually arrived by first class post, the disk drive by private courier. I did not receive an invoice or credit card slip, nor even an apology for the delay. The firm boldly advertises "Normally dispatched within 48 hours". I don't know anybody who has received this service. Had I been advised that the goods would take four weeks to deliver, I would have accepted it, but if one enquires, one expects an honest answer, not lies, as with Datel.

I therefore call upon readers to use Datel Electronics only as a last resort if the goods cannot be found elsewhere.

With regard to the quality, the RAM board is of a high standard although the firm did not include a diagram showing the direction to fit the chips. By contrast the disk drive has several faults. The fold-over lid did not fit correctly, leaving a large tapered gap at the front. Their sticker fell off, leaving a sticky triangle that cannot be removed, and the pass-through connector at the rear is out of line, making it impossible to connect another drive.

I have sent a copy of this letter to Datel and now await their comments. You may also find it interesting that Datel charged my credit card account on the day I ordered, a practice not liked by the credit card companies. I obviously object to being billed a month before I receive the goods, and had my credit card statement been received before the goods arrived I would have cancelled my order. I will be writing to the credit card company to complain about this bad practice.

Finally, a letter from Tim Gathercole of 158 Coronation Avenue, East Tilbury, Grays, Essex, RM18 8TE.

I have recently bought an Amiga XT bridgeboard and was wondering if you could help me on a few subjects:

1. I can understand the concept of "virtual drives" i.e. using the Amiga's own drives/devices for storing information. However, just how do I go about setting them up? As usual, the manual is as clear as mud. It seems to be saying that all of the information will be saved as one big file. Is this right?
2. I am thinking of adding a hard disk later, but which is better, an Amiga hard disk that the Bridgeboard can use as a virtual drive, or a PC hard disk that the Amiga can access?
3. I am a little disappointed with the speed of the screen in PC emulation mode. If I buy an EGA adaptor card can I use my 1084S monitor with it and would I have to keep turning it off, and changing the adaptor cables, or will the monitor allow you to switch between them?
4. After getting used to Workbench 1.3 and all its improvements, I now find myself stuck back with the 1.2 version as simply transferring the PC directory onto the 1.3 disk does not seem to work. How do I go about creating a 1.3 disk that will run the bridgeboard?
5. The A2088 user's guide talks about software that exploits both sides of the system at the same time. This sounds interesting, but does all this software exist only in the writer's imagination.
6. After learning to love Amiga Basic (yes, there are some of us), I now find GW-basic archaic. Line numbers, no structuring and it does not support IF-THEN-ELSEIF-ENDIF. Yuk! Is there another PC basic out there that will do all of these things?

Tim signs off by suggesting that the answer to this letter takes the form of a Newsletter article. Over to you, A2000/Bridgeboard owners!!!

DISCOUNT CORNER

by John Bickerstaff, the Discount Officer.

Please refer to pages 64 to 67 in the January/February issue for GENERAL INFORMATION and specific discount information. Refer to pages 162 and 163 in the March/April edition for specific discount information. Do look at the items in this edition - some facilities have changed even since the previous issue.

CBM Hardware is available to members at discount rates. Call for details. News for Amiga 2000 owners is that the A2090A hard disk controller card is now available together with a 40 MB hard disk. This combination when used with a 1.3 KickStart ROM can auto-boot your Amiga without the need of a floppy disk. The long promised AT Bridge Board for the 2000 Amiga has at last arrived and can be obtained now from retailers. This is only 18 months after the original date quoted by CBM when the A2000 was first released. Fat Agnus has got fatter. Available now for developers and for those that live in the USA is a new Agnus chip that allows access to 1 MB of display memory. It should be available here at the end of 1989 (so CBM UK say) as part of an Enhanced Chip Set - the other revised chips in this pack will be Denise and Gary. For those of you who have just got hold of the 1.3 Enhancer pack and may be trying to get hold of a 1.3 KickStart ROM this must represent quite a challenge, to be the first to get Re-Enhanced!

Brain Boxes. This company have just produced a shortform coloured catalogue showing their considerable range of PC and PS/2 related interfaces. They continue to provide products related to the C64 and C128 machines as listed in issue 1 of volume 11 (January/February 1989). 15% discount is available to members on any Brain Boxes product. You may obtain a copy of their latest catalogue and price list from Unit 3G, Wavertree Technology Park, Liverpool L7 9PF - phone 051-220 2500.

Cavendish Commodore Centre of 66 London Road, in Leicester (LE2 0QD) phone 0533-550993 hold large stocks of Commodore equipment. Please note that they are major stockists of available VIC 20, C64 and C128 products.

Database Software. This company has decided to withdraw its original offer to supply members with Mini Office II at special discounted prices. This offer was promoted through advertisements in the newsletter with guidance in the Discount Corners beginning in the March/April issue of volume 9 (1987).

The promotion was a great success but Database have re-organised their software selling arrangements and will no longer be able to supply members on a direct mail order basis.

Datel advertised an Action Replay Cartridge for use with C64 and C128 machines which was said to have the ability to transfer to disk multi-load tape programs with the use of an optional enhancement disk. A member who required this special feature found that Datel could not provide this enhancement disk. We thought you should know about a member's difficulties.

Diamond Computer Systems Ltd of 6 Gwen Rhian Court, Court Road, Southampton SO1 2JS, phone 0703-338933, offer special prices on Amiga hardware and software. For information please call Mike Brown on the above number.

Digipro Ltd of Enterprise House, Howards Grove, Southampton SO1 5PR, are offering members through this issue external 3.5 inch drives for the Amiga at £79.95 each inclusive of VAT (RRP £99.95). These drives have an NEC mechanism, a pass through connector and switch to turn off the drive to conserve memory, as required by some programs when your machine has the basic amount of memory. Call Ian Bennett on 0703-72743 or 0703-703030 to order your drive now.

HB Marketing Ltd are now distributors of Superpic, a digitiser emanating from JCL. They allow discounts to members on this and all other hardware and software products they stock. Contact Keith Howell on 0895-441964.

ICPUG Special Offer.

ICPUG have a limited number of tractor feed units for attaching to MPS803 printers. If you would like one of these units please send a donation of £10.00 plus £1.50 postage and packing to the Discount Officer at 45 Brookcroft, Linton Glade, Croydon, Surrey CR0 9NA. Please make your cheque out to ICPUG and write your bank cheque card number on the back.

Micron Computer Centre Ltd have just introduced high standard Quantum hard disk drives for the Amiga 500 and 2000 machines. The unit for the A500 has a 40 MB hard disk whilst the unit for the A2000 has an 80 MB hard disk. These products have an access time of 11ms, are autobooting, have

capacity for up to 2MB RAM (but supplied with 0KB for the price) having a casing, a fan and separate power supply. The A500 unit is £570.00 (RRP £700.00) and the A2000 unit is £790.00 (RRP £950.00). These special ICPUG member prices are for orders placed against their initial consignment only so call David Barber on 0787-881998 (please note this new number) today and place your order.

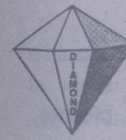
Miracom Limited of Miracom Centre, Hadleigh Road Industrial Estate, Ipswich IP2 0HB phone 0473-233888 have made a very special offer to ICPUG members who own C64 or C128 machines. This offer is for Miracom's 64 MultiModem which fits into the cartridge port and holds its software in EPROM. Of course it is BABT approved and can allow saving to either cassette or disk. It runs at 1200/75 and 300/300 baud and has auto dial and auto answer facilities. RRP is £112.13 but the Special ICPUG members price is £43.12 including VAT and post and packing while stocks last. If you wish to order by phone ask for either Coleen or Samantha who will take your Credit Card number, address and membership number. They will arrange for your modem to be sent directly to you. For your information Miracom used to be called Miracle Technology. They produce many modems and we hope to have other special offers available to members in the future.

Precision Software Limited. Three special offers are now available to members. Firstly they are offering SUPERPIC at £425.00 (RRP £499.00), secondly 'Who framed Roger Rabbit' at £12.00 (RRP £29.95) and thirdly 'Designasaurus' at £29.95 (RRP £39.95). The first and second items prices are subject to VAT at 15% whilst the third item includes VAT at 15%. Contact Paul Burgess and order directly from PSL.

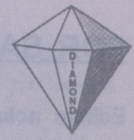
Editor's special offer. Your Editor has a limited number of sets of his popular Amiga 'Info-Mats', and copies of his book 'C-128 Companion' available to members only at £4.00 each plus 50p postage and packing. Half the proceeds will be donated immediately to club funds (the other half paying for the editorial hard drive!). This is a strictly one-off sale, and goods will be dispatched on a first come first served basis. Cheques should be payable to T.W. Arnot, and sent to 70 Westway, Botley, Oxford. OX2 9JT.

Discounts pages on the nets - Compunet GOTO ICPUG Micronet *icpug#

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